ANALYSIS OF CONTENTS

Preface — Page i

Peter L. Spencer, Claremont Colleges, Director of the Conference

Classroom Teaching Methods

Chloe Anderson, Long Beach Polytechnic High School: Selecting Objective Reading Tests and Analyzing and Using the Results of Reading Tests. 8

Virginia Belle Lowers, University High School, Los Angeles: Selecting Instructional Materials: Books, Periodicals, and Other Materials. 114

Theodora Mahan, General Supervisor Ventura County Schools: Planning Methods of Improving Vocabulary. 122

Dr. Reuben Palm, Director Secondary Education, Los Angeles County Schools: Improving Reading Comprehension. 163

Evaluation

Dr. Willis W. Clark, Director of Research and Guidance, Los Angeles County Schools: Evaluation in the Schools Program. 35

Dr. Jessica Miller, School Psychologist, Long Beach City Schools: Evaluation, A Stimulus to Growth. 130

Dr. May Segoe, Education Psychologist, University of California at Los Angeles: Evaluation as a Teaching Tool. 203

Dr. Violet G. Stone, Director of Elementary Education, Ventura County: Evaluation of Growth in Reading 218

Hearing of School Children

Ruth Bartlett, Speech Training Teacher, Los Angeles: The Psychology of Hearing Loss. 12

Herman W. Covey, M.D., C.M., Medical Director and Psychiatrist, Juvenile Hall Clinic, Los Angeles: The Influence of Physical Factors Upon Behavior. 50

Mrs. Minnie Hawes Davies, Hearing Conservation Teacher, McKinley Junior High School, Pasadena: Routine Versus Special Instruction. 58

Mr. Charles Hunsburger, Vacolite Distributor, Pasadena: Hearing Aids and Their Adaptability to Young People. 107

Ray M. Moose, M.D. Otologist, San Bernardino: Audition and Nutrition; a Survey of the Problem of the Hard of Hearing. 145

Catherine A. Phelan, Speech Reading Teacher, Whittier Public Schools: Is Hearing Conservation the Educator's Responsibility? 190

Irene T. Short, Principal, Mary E. Bennett School, Los Angeles: Teaching the Deaf and Hard of Hearing. Problems of Reading and Language 207

M. E. Trainor, M.D., President Auricular Foundation, Inc.: Unity in Hearing Conservation 248

Materials and Implementation of the Reading Program

Dr. Tempe Allison, Dean of Women and Head of English Dept., San Bernardino Junior College: The Full Man and the Ready Man. 4

Mrs. Lillian Anderson Downey, Education Consultant in the Elementary Field, D. C. Heath and Co.: The "Reading for Interest" Series. 67

Mrs. Lillian Gray, Associate Professor of Education and Teacher Training, San Jose State College: The Value and Use of Basic Readers in a Modern School. 86

Mrs. Edith H. Merrill, Elementary Specialist, Macmillan Company: Importance of Basal Textbooks in Teaching of Reading. 127

Dr. Eason Monroe, Reading Study Service, University of California at Los Angeles: Emerging Concepts in the Teaching of Reading. 137

Ivor A. Richards, Harvard University Commission on English Language Studies, Cambridge, Mass.: Basic English. 195

Physiological Factors Affecting Educability

Mrs. Iris H. Albert, Supervisor of Home Economics, Los Angeles City Schools: The Road to Good Nutrition 1

Willard B. Hargrave, Executive Director, Auricular Foundation, Inc., Los Angeles: Adjustment of the Physically Handicapped. 101

Dr. George N. Thompson, M.D., Instructor in Neurology and Psychiatry, University of Southern California Medical School: Psychiatric Factors Affecting Learning. 238

Dr. Clifford A. Wright, M.D., Los Angeles Orthopedic Hospital: The Influence of the Ductless Glands on Education of Children 251

"Primary" Reading

Dr. A. O. Bowden, Dept. of Anthropology, University of Southern California, Los Angeles: Culture and Conflicts in the Backgrounds of Bilingual Children. 29

Jean Jacques, Editor, Western Trailer Life, Glendale: Old Men of the Desert (Joshua Trees). 111

Dr. Robert S. Richardson, Mt. Wilson Observatory, Pasadena: Application of Astronomy to Present Day Teaching Problems. 201

Problem Children

Mrs. Elta S. Pfister, Director of Individual Guidance, Burbank City Schools: Group Harmony. 183

Elis Tipton, Teacher, San Dimas: Problem Children or Problem Communities: Minority Groups. 224

Visual Training and Visual Aids

Mrs. Vivian E. Beard, El Monte Union High School: A Visual Health Program in Public Schools. 18

Bertha Dow, Teacher, Fontana City Schools: Measuring Blindspots with Remedial Reading Problems. Nutrition and Seeing. 63

Herbert Elkins, Keystone Representative, Hollywood, Los Angeles: Third Dimension in Teaching . 82

Martha Farnum, Principal, Logan School, San Diego: Visual Aids in Concept Building. 93

Dr. Don Morrison, Morrison Visual Clinic, Alhambra: Visual Skills and Visual Training. 148

Mrs. George A. Parkins, Jr., Glendale: Problems in Visual Re-Education. 170

Dr. Peter L. Spencer, Claremont Colleges: Visual Training, A Remedial Reading Technique. 215

Claremont Colleges Reading Conference

July 12 to 17, 1943

EIGHTH YEARBOOK

372.4
C591c
v.8
1943

CLAREMONT COLLEGES LIBRARY
CLAREMONT, CALIFORNIA
1943

CLAREMONT COLLEGES READING CONFERENCE

July 12 - 17, 1943

Eighth Yearbook

Sponsored by Claremont Colleges
and
Alpha Iota Chapter of Pi Lambda Theta

IOWA STATE TEACHERS
COLLEGE LIBRARY

Claremont Colleges Library
Claremont, California
1943

Copyright 1943 by Claremont Colleges Library

PREFACE

Peter L. Spencer, Ph.D., Professor of Education and Director of Studies, Claremont Colleges

Claremont Colleges Eighth Annual Reading Conference was held during the period July 12 through 17, 1943. The daily program consisted of six workshop sessions each morning, five lecture-discussion sections each afternoon except Saturday, and evening programs consisting of major lectures and entertainment.

One of the workshop sessions was conducted by representatives of publishers of materials for reading instruction. The purpose of these sessions was to give opportunity for the editorial staffs of publishing companies to explain their procedures for determining what materials should be published and to suggest what in their judgments are the best uses of their materials. Three articles from this section are reported in this yearbook. They were prepared respectively by Mrs. Lillian Downey, educational consultant in the elementary field for D. C. Heath and Company (page 67), Mrs. Lillian Gray, editorial staff for Scott Foresman Company (page 86), and Mrs. Edith H. Merrill, elementary specialist for Macmillan Company (page 127).

With the programs for reading customarily found in schools much use is made of the visual process. So little is known about the real state of visual ability among the pupils and about the ways in which visual ability may be developed that it was thought proper to devote a workshop session each day to that aspect of the reading field. The afternoon sessions included discussions of the use of visual aids to learning. From these morning and afternoon periods seven articles have been selected for the yearbook. They treat of a variety of aspects of the problem ranging from a basic conception that the education of the visual process is feasible and necessary (Spencer, page 215), through the presentation of a proposed visual health program for public schools (Beard, page 18), a discussion of evidence of deficiency (Dow, page 63), problems and procedures for greater visual ability (Parkins, page 170 and Morrison, page 148), and specialized uses of visual aids to learning (Elkins, page 82 and Farnum, page 93).

Vision, although largely unexplored as it affects reading is, as compared with hearing, a well developed field. In order to read oral speech and other sounds that are important to man, the hearing process must be used. Under the direction of the Auricular Foundation a strong workshop section was provided in the 1943 Reading Conference to study hearing. Eight papers presented before this section are made available in this yearbook. They constitute a pioneer attempt to develop this little known aspect of a complete reading program. Dr. Trainor, President of the Auricular Foundation, emphasizes Unity and Hearing Conservation (page 248). Dr. Moose, otologist, stresses Audition and Nutrition (page 145). Dr. Covey, Medical director and Psychiatrist at Juvenile Hall Clinic in Los Angeles, stresses the physical factors which influence behavior (page 50). Miss Phelan places responsibility with the educator for executing a program of hearing conservation (page 190), but this can scarcely be accomplished unless a program feasible for schools can be developed. Such a program is considered by Mrs. Davies, who discusses routine versus special instruction (page 58). Miss Short and

169539

Miss Bartlett, both of whom have previously participated in the Claremont Conferences, discuss respectively, Teaching the Deaf and Hard of Hearing (page 207), and the Psychology of Hearing Loss (page 12). Finally the question of aids to hearing and their adaptability to young people is discussed by Hunsberger (page 107).

Closely allied with the work of the sections on vision and hearing was a third section which considered physiological factors which affect educability. The concern in these considerations was to discover what portion of the total program of reading development should be devoted to treatment of intrinsic properties affecting the educability of each learner, and what portion might be properly assigned to customary instructional materials and techniques. Dr. Wright returned to the conference to speak again on The Influence of the Ductless Glands on the Education of Children (page 251). Mrs. Albert reiterates the basic need for good nutrition (page 3). Dr. Thompson points out the importance of Psychiatric Factors Affecting Learning (page 238). Mr. Willard Hargrave, Director of the Auricular Foundation, has experienced in his own education the problem of Adjustment of the Physically Handicapped which he discusses (page 101).

The section on "Problem children or children with problems" was closely allied with those just discussed. In a good program for reading development, the instructor must of necessity be able to read the student. Mrs. Pfister gives an idea what Group Harmony or conflict may mean in the final product of an instructional program. Miss Tipton carries the point still further in her consideration of minority groups (pages 224) or as the issue was put, Problem Children or Problem Communities?

Claremont's conception of the nature of the reading process is responsible for a section of the conference being called "Primary Reading." This does not necessarily refer to reading at the early grade school level. It refers to the reading of things rather than mere symbols for things. Reading people is a prerequisite for teaching them. Dr. Bowden gives a lesson in this regard in his discussion of Culture and Conflicts in the Backgrounds of Bilingual Children (page 29). More simple, perhaps, but fascinating to anyone who has seen Joshua trees is Mr. Jacques' reading of the Old Men of the Desert (page 111). Man has always read stars but one must go beyond mere observation to comprehend the true and full story of the stars. Dr. Richardson presents this issue in the Application of Astronomy to Present Day Teaching Problems (page 201).

The Claremont reading conferences are unique in emphasizing such problems as have been reviewed in the preceding paragraphs. More customary and yet treated in original ways are the problems of Classroom Teaching Methods for developing proficiency with the visual reading of printed word symbols, and those of evaluation of the products of teaching and of study or learning. The Southern California Section of the California Secondary School Principals' Committee on Reading collaborated with the sponsors of the reading conference in presenting a series of discussions of practices in the teaching of reading.

Miss Anderson presents the problem of Selecting Objective Reading Tests (page 8). Mrs. Lowers similarly considers the Selecting of Instructional

Materials (page 114). Miss Mahan and Dr. Palm treat respectively of methods of vocabulary improvement (page 122) and the improving of understanding that which is read (page 163). Dr. Allison indicates a functional relationship between the reading of speech symbols and those which are printed or written (page 4). Evaluation: a Stimulus to Growth is discussed by Dr. Miller (page 130) with a pertinent emphasis on the reader's developing ability to read himself. Dr. Seagoe similarly stresses Evaluation as a Teaching Tool (page 203). Dr. Clark discusses Evaluation in the School's Program (page 35) and Dr. Stone considers Evaluation of Growth in Reading (page 218).

Dr. Monroe discusses nine Emerging Concepts in the Teaching of Reading (page 137). Dr. Richards in presenting the importance of Basic English (page 195) makes the point that English is certain to be the language of the air ways. Along with the global concepts of geography there are similar global concepts of language and social relationships. Hence the problem of developing proper and adequate reading ability becomes more and more important.

This report of papers presented before the several sections ranks next to actual attendance and participation in the conference itself. Alpha Iota Chapter of Pi Lambda Theta and Claremont Colleges are proud to make this yearbook available.

THE ROAD TO GOOD NUTRITION

Mrs. Iris H. Albert, Supervisor of Home Economics, Los Angeles City Schools

The value of proper nutrition for live stock has been known for several generations. The ten-year-old boy or girl who is a member of the 4-H Club talks glibly of proper feeding to produce pork, beef, milk or eggs. It is hard to understand how all who have been so interested in fine stock have failed to realize that they could raise a fine crop of healthy boys and girls. Before the war forty per cent of our population had poor and inadequate diets, in a time when there was a surplus of meat, milk, eggs and other dairy products. When children fail to eat these foods that are rich in vitamins and minerals, they are in fact, starving.

Vitamins and minerals in foods have a universal application to health. Good health is the ability to resist disease and is needed for the proper growth and development of the child's body. Vitamins and minerals constitute the quality of the diet. When they are lacking malnutrition results and the body suffers from what scientists term "hidden hunger" as contrasted with the "hollow hunger" of starvation from an insufficient quantity. Many nutritionists regard a partial impairment of the quality foods as even more serious than of quantity because its ill effects are not detected until too late in life. Malnutrition is usually due to ignorance of food values. Today the problem of feeding is a serious one because of shortages of these essential protective foods. It is only through a united effort on the part of scientist physicians, nutritionists, teachers and homemakers in teaching the value of an adequate diet that we can make America strong by making Americans stronger.

The United States military authorities, appalled at the forty per cent citizenry undernourishment, have set the example for our armed forces by establishing a substantial, nourishing diet. Parallel to this is a civilian nutrition program with all the cooperation of commercial, civic, educational and professional organizations. Advertising men say that it has been one of the best planned and most successful campaigns produced in the United States. I have found that a man, woman, boy or girl once convinced that nutrition is essential to their own well being, feels inspired to aid others in the improvement of their eating habits. This service together with the war psychology are the important factors in promoting the spread of nutrition. The National Nutrition Council has adopted higher nutrition allowances than those which formerly were considered adequate. These in turn have been interpreted for the lay person in what has been called the "nutritional yardstick" or the "basic seven." In the first group are the milk and milk products. All types of milk as whole, skimmed or buttermilk, and all cheeses are included in this group. This is chosen first because it is important for both children and adults, a quart for the little ones and a pint for the adults. Milk contains valuable proteins that substitute for scarce meat proteins, as well as the much needed calcium and phosphorus -- bone forming materials -- and the very important vitamins A and riboflavin.

Another group contains the rationed meats (liver, kidney, heart), fish and poultry. These are the animal proteins of high nutritional value. The growing child needs two to three times as much protein per unit of body weight as the adult, and it is of even greater importance that two-thirds of this protein should be of animal origin, including the foods mentioned as well

as eggs, cheese and milk. In all wars protein is difficult to obtain so it is a problem to see that every nine year old child has a quart of milk (33 gr.) per day, one egg (6 gr.), four ounces of meat (22 gr.), which equal the sixty protein grams required. The effects of a diet deficient in protein may not be obvious for some time. Children on a poor protein diet are usually below par both physically and mentally without being actually ill. They are lacking in physical tone and slow in mental reactions. If a negative balance of protein occurs during childhood, growth cannot take place normally. It is of tremendous importance that growing children eat sufficient protein to maintain a positive balance at all times.

The next three groups are your non-rationed foods if purchased fresh or raised in your garden. They give calcium for bones and teenth, iron for healthy blood, other necessary minerals and vitamins for health and vigor. The foods that make up these groups are green and yellow vegetables, oranges, tomatoes, grapefruit, potatoes and other vegetables and fruits.

The sixth food group contains bread, flour and cereals. At the present writing, there is a plentiful supply of all cereal products. These non-rationed foods give iron, vegetable proteins and vitamins. The child likes a smooth, bland diet, deficient in the B vitamins and unless trained to select the whole wheat breads and cereals early in life will soon show nervous instability, and have a short span of attention. Many behavior problems are helped by a diet rich in brewer's yeast and wheat germ. The essential of child health is parental control and good food habits started early in life will bring a rich reward in health.

The seventh group consists of butter and fortified margarine which give fat for energy and vitamins for health and vigor. No matter how great the daily intake of vitamin A may be, the body can make use of it only in the presence of fat because vitamin A is soluble only in fat. Without it the intestines cannot transport it to the liver and the liver cannot store an excess.

For health, foods from each group should be eaten every day. Not all foods are good for the same purpose. Carrots, for example, contain large quantities of vitamin A; cauliflower, scarcely any. Whole wheat bread is rich in vitamin B1; white bread is poor. Good health, of course, depends upon plenty of food; but unless the plenty includes an adequate supply of each of the vitamins, then the diet is deficient. A man will die no matter how much he eats, if his vitamin and mineral supply is reduced to a minimum. Vitamin deficiency has been called "hidden hunger." It gnaws, not at the stomach, but at the heart, muscles, eyes and nervous system.

Not enough attention is paid to the breakfast or lunch of school children as well as adults. Our industrial life emphasizing a light and hasty breakfast, small lunch and hearty evening meal, has not helped our nutritional problem. Experiments have shown that students who fail to eat breakfast have the lowest blood sugar and make the poorest grades. Actually breakfast should be the heaviest meal of the day and the evening meal the lightest. This applies to the old as well as to the young. Unless civilians will change their eating habits, they cannot or will not be able to eat enough vitamins and minerals at the other two meals. If a breakfast that provides twenty per cent of each food constituents recommended by the National Research Council is eaten, it will be easy to get the total requirement in the other two meals.

A cup of coffee and a bun can't begin to do the job.

Every teacher should have some part in the health educational program for it is impossible to divorce health integration from curricular material. She should observe and study malnourished children, the homes and community from which they come. The school can help develop good food habits in children as eating a hearty breakfast and a nutritious school lunch. The effect of improved nutrition upon mal-nourished children is easily observed. Strong straight bodies which can carry the load of a hard day's work are built with nutritious meals. Nerves that are steady, firm and unafraid are found in bodies fed a well rounded diet.

Breakfast

A typical breakfast that includes more than one-fifth of daily requirements is:

2 sliced oranges
whole wheat cereal - milk and sugar
1 egg
2 slices of toast
1 pat of butter
1 glass of milk

Box Lunch

Recommended by the L. A. Industrial Nutrition Committee to contain 40% of daily nutritional requirements:

1 cold meat sandwich, lettuce, whole wheat bread
1 cheese sandwich, lettuce, whole wheat bread
1 medium tomato
1 oz. salted peanuts
4 oatmeal cookies
8 oz. milk

THE FULL MAN AND THE READY MAN

Dr. Tempe Allison, San Bernardino Junior College

"Reading maketh a full man; speaking, a ready man; and writing, an exact man; therefore if a man write little, he hath need of a great memory; if he speak little, he hath need of a great wit; and if he read little, he hath need of much cunning to seem to know what he doth not," wrote Francis Bacon some three centuries ago in a summary of the values inherent in study of the three aspects of communication. He has set forth in memorable and succinct phrases the fundamental characteristic of each; and the volumes since written on the problems and worth of reading, writing, and speaking have enlarged upon the implications of the Elizabethan's definitions by references and examples, but have not increased to any appreciable extent the scope of the functions.

As teachers of the arts of communication, we have not always been so discriminating and discerning in our sense of the relationship of the three as was the Elizabethan philosopher, scientist, and essayist. At times we have stuffed our students with reading until their intellectual skins were stretched to the verge of popping with semi-digested facts and figures. By means of curricular and extra-curricular stimuli, we have loosened students' tongues at both ends so that they flapped with every passing breeze of an idea whether it was frought with thought or not. Student brains, arid of ideas and impoverished in vocabulary, have been prodded into pouring out daily or weekly themes without end. The right hand teacher of reading has followed Biblical injunction and not let the left hand teacher of speech know ought of what was being done in reading. The speech teacher has all too happily gone on his own merry way discussing voice improvement, gesture, phonetics, foot position, and the what-nots of the tricks of the platform, seldom or never concerned with what was to be voiced, gestured, or "phoneticized." For a full and well-rounded training in the arts of communication, we must get back to a recognition of the integrated nature of the tripartite problem of the language arts. We need to become cognizant, particularly, of the relationship between visual reading and oral expression, between the full man and the ready man, especially when they are housed in one and the same human personality.

Increasingly in recent years that phase of speech education which is variously described in college catalogues and college textbooks as "platform speaking," "speech making," or "public speaking" has been concerned with the sources of material for the young speaker and with his adequate mastery of the material. In other words, there has been recognition of the function of visual reading in the making of the neophyte a full man. Summarization, outlining, and precis-making based on reading are appearing in increasing proportions as devices to assist the student in speech. Texts and courses are emphasizing the relationship between reading as a basis of ideas and the expression of ideas in oral composition.

Too often, however, an assignment for a talk means a hasty dipping into magazines and books, and an actual speech is second only to the term paper as a stimulus for the drawing of books from the library, the speedy copying of passages, and the throwing together of all the hodge-podge into something that passes as a speech. Its resemblance to genuine communication is about as authentic as that of Portia's suitor to a man: "God made him, therefore let him pass for a man."

He who would be a master of oral address must make himself worth listening to by adding to his own experience as a source of material the breadth and depth of knowledge to be gained from analytical reading. Good reading is a fundamental discipline for good speaking. Thoughtful perusal of other men's writing will not only increase information and provide facts; it will also stimulate the growth of ideas and enhance the understanding and critical judgment. Judicious, not rapid reading is the requirement for improving public address. Only by careful and extensive reading can the ready man become the full man, and therefore rich in content and wise in evaluation; for casual reading is not only, as Coleridge says, "among the great destroyers of intellect" but also among the chief enemies of judgment.

The public speaker has depended upon efficient visual reading both for much of the content of his text and for the interpretation of that content. He is impoverished, indeed, who depends entirely upon experience as a source of material. His address is like the theme of the callow freshman who believes that the first draft of whatever he writes is good enough for the printer or a grade of "A." The experienced and finished speaker knows that good speaking requires hours of reading and thinking. Some one once asked Henry Ward Beecher how long it took him to prepare a particularly eloquent sermon. Beecher replied, "Forty years." Only inexperienced students doubt the truth of the injunction: "It takes one hour of preparation for one minute of speaking." He who would not only speak but also "speak true" must read for information to acquire facts and for understanding to acquire significance. The student of public speaking, therefore, needs the highest possible skill in visual reading, for, to him, it is an essential tool.

On the whole, the relationship between visual reading and that phase of speech education variously described as "speech arts," "oral interpretation," or "oral reading" is less generally recognized and is perhaps less obvious than that between visual reading and platform speaking; yet mastery of the tools and skills for adequate performance in oral reading that goes beyond the acquisition of a few physical and vocal tricks must be grounded in efficient visual reading. Effective interpretation demands complete comprehension of content and background as well as expert control of the physical and vocal mechanisms. For the finest artistic results both are essential: neglect in bringing the physical and vocal mechanisms under control results in inadequate bodying forth of the content; failure to get a thorough grasp of all aspects and details of the content of material results in dilettantism, superficiality, in a performance "full of sound and fury but signifying nothing."

Because the material which the interpreter communicates is not of his own composing, his primary problem is one of comprehension: comprehension of the purpose of the whole; comprehension of the pattern or structure of the whole and each of its parts; comprehension of each sentence and phrase as individual units and as motifs in larger designs; comprehension of words singly and in groups; comprehension of sounds, of rhythms, of meters, of rhymes, or whatever peculiarities of style or expression characterizes the work. In short, he must read for mastery of everything that lies back of the work of art as well as everything that appears in it. He must read for information about the author, the period, the form, the history of the work; he must do the same type of visual reading which any seeker after facts and understanding does in building up a background for his interpretation. He has need, therefore, of similar training in visual reading.

But his reading must go farther and deeper than comprehension of facts and ideas. He must read much more thoroughly and closely. Nothing less than a complete and detailed understanding of the words used will suffice. "Fine elocution," Ruskin says, "means an exquisitely close attention to and intelligence of the meanings of words and a perfect sympathy with the feelings they describe." The interpreter must have not only a knowledge of the meanings of words but he must also be familiar with their history, the shifts in meanings, the shades of meanings, the association of the meanings, their sounds as well as their sense. He must recognize that a "word is not a crystal transparent and unchangeable, but the skin of a living thought and may vary in color and content according to the circumstances and time in which it is used."

Oral reading must be preceded by most careful reading of word groupings and sentences as well as the meticulous study of words. If like Quince, the interpreter "does not stand upon his points" both as marked and unmarked by the author, his comprehension as well as his speech will be "like a tangled chain, nothing impaired but all disordered." He must read for grammar, for syntax, for parallelism, for subordination, for contrast, for a dozen and one things in form and structure.

Sentences in themselves or their relation to what immediately precedes or follows, although essential to comprehension, will not suffice for adequate communication by the interpreter. He must read for the author's logic, for his pattern of ideas. Careful analysis in order to determine the method of growth of the ideas is necessary not only for the interpreter's full comprehension but is essential for full communication to the hearer who must grasp the pattern along with or as a part of the idea.

But in literature, especially great literature, ideas, although the foundation on which the whole is built, are only a part of the content to be understood by the reader.

> "The lunatic, the lover, and the poet
> Are of imagination all compact
> .....
> The poet's eye in fine frenzy rolling,
> Doth glance from heaven to earth, from earth to heaven
> And as imagination bodies forth
> The forms of things unknown, the poet's pen
> Turns them to shapes and gives
> To airy nothing, a local habitation and a name."

Unless the interpreter goes further than a mere understanding of the thought, he will fail to grasp the real meaning or significance of that thought as it is enriched and illuminated by the imagination. The point of departure, the foundations of a mastery of imaginative content, lie in the language of the author. The reader gives form and color to those words, first in his own mind and then in the minds of his hearers. This he does by concentration in reading, by pondering as he reads, by observing every hint, every suggestion embodied in the text. He fortifies and enlarges the image suggested by the printed words with related images from other sense experiences. Into the phrase "the yellow loquats," he reads the cool unslick rind in his hand, the pungent delightful aroma, the piquant sour-sweet taste, the pear-shapeness, the gray-green leaves of the tree. Only when he reads so imaginatively will

the reader capture the essential idea of the author. Frank Jewel Mather has said that the imagination is the organizing force of all art if not of all knowledge and of all life. There can be no comprehension of a piece of literature without a mastery of its imaginative content.

Neither intellectual content nor imaginative import holds all the meaning of a piece of literature, for the essential quality of great writing as of great music or great painting is its emotional qualities, its power to arouse feeling in its readers. If we are to believe the statements of creative writers, all literature begins in an excitement of body and soul, in some powerful overflow of emotions, in an elevation of soul. Masefield declares that "a poet by brooding upon an experience or subject sees the opportunity which it will give for the exercise of his powers, but its effect or enchantment will depend upon the measure of excitement that he can maintain as he writes." The author maintaining this excitement endeavors to communicate it through his choice of words, his imagery, his construction of phrase, his arrangement of parts. The interpreter who will read the poem, play, story, or novel in such a way as to present all its values and its whole worth must read the work for its emotional content. To communicate bare idea or thought is to give but the lesser part; to communicate imagery or imaginative significance without the quickening flow of feeling is to show a cold, dead beauty. He who communicates literature, therefore, must read for the high excitement which moved the writer, the exaltation which moved the creator in the experience and in its communication.

Michael Angelo once said, "We painters do not paint with our hands but with our brains"; interpreters do not read with their eyes or their minds alone, but with their fancies and their hearts. The competent oral reader must be a good visual reader; he must master every technique which is commonly ascribed for good visual reading. I hazard a suspicion that the average visual reader would be a better reader, that his reading would be more meaningful, more complete, if he would use more of the techniques necessary for the successful oral reader.

It is obvious, it seems to me, that speech education whether it deal with oral composition or with oral reading is fundamentally bound up with visual reading and that efficient visual reading is essential to any worthy achievement in any form of speech.

SELECTING OBJECTIVE READING TESTS AND ANALYZING AND USING THE RESULTS

Chloe C. Anderson, Polytechnic High School, Long Beach

The following suggestions concerning the use of reading tests will provide little if any new material for the experienced teacher. They are based on one teacher's personal experience and may serve as guideposts along the pathway of those who are setting up a developmental reading program. A few may be seeking direction in the selection of adequate and reliable standardized tests, some are desirous of analyzing and interpreting the results of the tests in the most effective way, and others wish to learn a follow-up technique that shall stimulate the students to an attempt to master their own individual reading problems.

Whether the secondary teacher is presenting the course of developmental reading intensively in a segregated group assigned to her for a quarter or semester for remedial work, or whether the reading program is a part of a basic course in English, social studies, science, or mathematics, she must first of all determine the status in reading of each individual student at the outset. If the school has a testing program at the beginning of the semester, an objective, standardized reading test has doubtless been given by the educational counselor; and the results will furnish her the needed information concerning the reading age and reading grade of each student.

In case there is not a school-wide testing program, and the selection of a standardized test is left to the teacher herself, she may wish to be directed in the selection of the many tests available. There are, in general, two types of tests: the survey test, simple to administer, easy to score, yet limited in the range of skills involved; the diagnostic test, requiring more than one class-period to administer, difficult to score, yet thorough in testing the various aspects of the reading process. The chief disadvantage in the use of the latter type of diagnostic test lies in the fact that the labor and time involved in the scoring and tabulating of results may retard the actual program of remedial work; it may also discourage the busy teacher from retesting in the middle of the course in order to measure the progress of the class. The advantages of this type, especially if the results can be machine-scored, are obvious, in that the teacher may present to the student his specific limitations and disability. If a screening test is desired, and if the discovery of the more obvious limitations is the aim, the first type of survey test will suffice.

As to a guide in the selection of the best standardized test suited to her specific need, the following bibliography may be helpful to the secondary teacher of reading:

1. Mental Measurements Yearbook, 1940. Oscar Krisen Buros, Editor. Highland Park, N. Y. $5.40.
2. Reading in General Education. William S. Gray, Editor. American Council on Education, Washington, D. C. 1940. $2.50. -- pp. 405-414.
3. Reading and the Educative Process, Paul Witty and David Kopel. Ginn and Company, 1939. -- Appendix C, pp. 341-348.
4. Suggestions for Teachers of Reading, Grades VII to XII, Carol Hovious, D. C. Heath and Company, 1939. -- pp. 95-97.

5. The Nature and Use of Reading Tests, Arthur E. Traxler. Educational Records Bureau, Chicago, Illinois. 64 pp. 1941

There is no absolutely satisfactory standardized test. Some general principles in their appraisal may be listed as helpful:

1. The most satisfactory test will test several types of ability, such as
   Comprehension of paragraph and sentence meaning
   Ability to note details
   Word meaning
   Speed as related to the above skills

2. The test should be truly objective.

3. The test should provide norms of reading age and grade.

4. The test should give a profile graph.

5. The test should be capable of interpretation to the student when results are tabulated.

6. The test should not be excessively difficult to administer or to score.

Among the salient data are a coefficient of reliability and criteria of validity.

The presentation of the results of the test requires skill and good salesmanship on the part of the teacher. From the tabulation on the score-sheet she prepares some sort of graph on the blackboard which shows the median and quartiles of the group. She may use her discretion as to reading the names of those below the median line; numbers given to the students privately, may save embarrassment.

On a mimeographed test record sheet the student copies the results of his test from the front cover of the test, which the teacher has detached from the test booklet. He notes especially his rating and quartile and his special disability.

An individual conference with each student is almost indispensable; the teacher will be able to encourage each one in the lower quartile to exert an effort to raise his reading age and grade in the developmental program of the course. Those in the upper quartile should be stimulated to increase their skill.

The teacher of an intensive reading course will probably use one of the many text books designed to give drills in the mastery of definite techniques. Such a text will provide for frequent practice tests, based on material interesting and not too academic. The teacher whose reading course is correlated with such subjects as English, science, mathematics, or social studies will make her own practice tests. She will select a portion of the text unfamiliar to the student and formulate about ten strictly objective questions on the content. The number of words has been estimated, and the timing, as in any practice test, she records on the board in units of half-minutes.

The student keeps his own graph from week to week on his personal mimeograph sheets, one being kept for a record of speed, one for comprehension. These graphs should be inspected frequently by the teacher. If the fluctuations persist, and if the record is erratic, the teacher may wish to request the counsellor to give the student a more thorough diagnostic test in order to try to determine the cause of the difficulty.

Towards the end of the reading course the final standardized test (one of the parallel forms of the initial test) should be given and the results noted by the students on their standardized test record sheets. The important additional factor in this report is the matter of gain or loss in speed, comprehension, and vocabulary skills. The data should be recorded in terms of reading age and grade. The rise from the lower to the higher quartile should be especially commended; these students have successfully competed with their own records.

The actual constructive work of the course is obviously the most important aspect of the program and is merely bounded by the initial and final objective tests. The succeeding programs of this conference will treat specifically of these procedures.

Whatever the organization of the reading class may be, such skills as reading for comprehension of the paragraph, getting the sentence meaning, enlarging the vocabulary, increasing the eye-span, attaining facility in the use of the dictionary, acquiring ability to use the encyclopedia, card catalog, and book index -- all these aspects of reading, so definitely related to the study habits of the student, should be enhanced by various drills in technique. Oral as well as silent reading may enter into the program and special tests be devised for measuring the student's ability to interpret the thought to others. Special vocabulary tests, provided with follow-up activities based on the use of the dictionary, may stimulate an interest in the definition and use of words. The slow reader anxious to increase his reading rate, which if below 200 words per minute, is a decided handicap, may do a little outside practice work. He should be taught to compute the approximate number of words in the article by measuring the length of a typical page with a ruler and reckoning on the basis of 40 words per inch. The material selected should be easy to read. The student should make frequent reports on a standardized form of these self-imposed practice tests.

The teacher will not lose sight of the fact that the tests, discreetly interpreted, provide her with an instrument whereby she may dramatize to the students their corporate and individual needs and the possibility of improvement.

The objective test, whether informal or standardized, is merely a yardstick for measuring the student's ability and progress in the various aspects of reading. It is the first step in a developmental program. Like any diagnosis its significance will be in direct proportion to the follow-up activities which it stimulates. The tangible objective of both teacher and student is an appreciable net gain in his rating in the mechanics of reading. In addition to this progress, which the objective test ably demonstrates, are those intangible results which are of permanent value to the student: a keener realization of the genuine pleasure and profit which he may derive from reading,

and a conviction that books contain the things he wants to know.

Only as these ultimate objectives are correlated with the testing procedures, will the standardized test become an instrument of value. The ambitious teacher will cherish the hope that as an outcome of her efforts some students may emerge from the level of the superficial, slovenly, and even "reluctant" readers, to that higher plane of achievement where they may experience that liberty which "the loosened spirit brings."

PSYCHOLOGY OF A HEARING LOSS

Ruth Bartlett, Speech Training Teacher, Los Angeles

The psychology of the hard of hearing is not unique. The same behavior patterns develop in individuals who have other types of physical handicaps, and, in those who have none. Observers are prone to regard certain particular reactions as the peculiar property of all who lack aural perception.

Writers, students, social workers, otologists, and others who are interested in the problems of the hard of hearing concede that young children who grow up with a hearing loss do not, as a rule, develop personality problems in connection with it; while those who note a hearing loss in adolescence or early maturity suffer intense emotional difficulties. The majority of the hardships and emotional reactions among the hard of hearing have come to them through unpleasant contacts with thoughtless persons who have laughed at them or who haven't time to repeat a remark. As a result, the hard of hearing individual feels himself isolated because he does not know what is being talked about and is afraid to annoy others by asking questions.

When a hearing loss becomes so severe that social contacts are abandoned, there is a tendency to feel that the future holds nothing in store. There seems to be a feeling that it is impossible to associate with or to compete with others if one does not hear. Human beings think, they breathe, they live socially; a hearing loss isolates them more than does any other handicap. Isolation creates a feeling of inferiority and a lack of orientation. Mental and emotional ill-health result which, in turn, seek to cure themselves by panaceas familiar to teachers the world over; truancy, a-social behavior, bluffing, excuses, blaming deficiencies upon someone else, shame and withdrawal, continual talking or, no talking at all, rough manner, mannerisms, and the like. The fundamental problem may be disguised but its true identity may be determined by a bit of intelligent sleuthing.

Each individual will have a set of problems which are his alone. These physical and personality handicaps must be discovered by means of audiograms, questionnaires, observation, and personal interviews with his family and friends as well as with himself. Having found the difficulty, the solution will be influenced by the type of individual he is and by the available helps which can be brought to his utilization.

The whole person must be studied and the sooner after a hearing loss has been noted this study begins, the better the chances for making a good adjustment. Maladjustment is a crime which should be prevented, at once, and not investigated after five, ten, fifteen years of ingrowing bitterness. Help is greatly needed, for the effects on personality which accompany a hearing loss cannot be overcome alone. The individual loses his sense of proportion through lack of normal contacts; one channel of emotional and mental stimuli is closed to him, others must be opened immediately. Lack of auditory stimuli affects the emotional, mental and volitional life to such an extent that many who fail to receive help are not able to live normal lives.

Adjustment to a Hearing Loss

Studies in social psychology of education, education for social growth, history of the psychology of the handicapped, mental hygiene, biographies,

autobiographies, and case studies of the hard of hearing; twenty-two years of living with a severe hearing loss; seventeen years of teaching lip reading, have, each and all, helped the writer to evolve some ideas concerning potentialities for and against an adjustment to a hearing loss.

Factors which influence for and against adjustment

In a recent survey it was found that the same factors which were named as elements in a maladjustment, in one or more cases, were considered to be elements in a good adjustment in other cases. There was one hundred percent agreement as to one factor which makes a hearing loss difficult to endure and that is the ridicule which is directed at the hard of hearing and the impatience with which they are treated by the public, their families, and their well-meaning friends. The majority of the younger cases in the study did not realize there was a hearing loss; they only knew they were "different" from other children. No affliction can bring greater mental suffering. They rebel, they do not wish to be hard of hearing, they resort to subterfuge, they bluster. It is extremely difficult to develop in these adolescents a desire to take steps toward adjustment.

Factors named:

Sex
Age at time hearing loss was first noted
The degree of the loss
The type of ear disease
Education
Economic Status
Social Status
Emotional reaction to handicap
Potentialities within the individual
Potentialities without the individual
Family, friends
Attitude of the public

The age factor may be introduced by some such complaint as: "If I had only been younger when my hearing loss was discovered I would not have wasted so many years of my life in learning to be a radio technician." And again; "My hearing loss was discovered when I was quite young and so I knew there were many things which I could not do."

It has been noted by many observers that women, in the aggregate, are far more sensitive concerning a hearing loss than are men. There is no way to prove that women suffer more since it is impossible to measure accurately just how another person feels, yet the behavior patterns of women indicate maladjustments far in excess of those of the men. Men will contend that they are the breadwinners, that they must work and cannot allow their emotions to overwhelm them.

One young man thinks he missed so many opportunities because his hearing loss was on the borderline, not severe enough to make him alert; he half-heard, he half-understood his teachers. A young lady thinks she has so much richness in her life because she could hear well during the greater part

of her childhood. And again, one will have a feeling of defeat because the doctors can find no cause for his hearing loss, consequently no hope for correction; while another is constantly energetic and ambitious in order to quell the clamor of head noises.

Lack of education is bitterly deplored by many and gratefully enjoyed by others who are glad they did not waste time learning a trade or an art which require hearing acuity. In general, the more highly educated in the refinements of life the student may be, the more sensitive he is to a hearing loss; he cannot suffer the shouting and gesticulating which many persons employ in their efforts to make him understand.

Economic security is a deciding factor in making a good adjustment to a hearing loss as is, also, an assured social position, while the lack of either or both results in maladjustment in the majority of cases.

Potentialities within the individual which, if lacking, have tendencies toward maladjustment but which, if developed, may be utilized to adjust the whole organism to a hearing loss:

Good health Bodily and Sensory	Emotional Health	Type or types of Perception	Intelligence

Stimulus Respone
Goal or Incentive

Receptive Organs
Cooperating and Matching
Good Auditory imagery
Good Visual imagery
Kinesthetic empathy

Within the person the prime channel which leads to maximum efficiency is good health, bodily and sensory. In many cases a hearing loss accompanies or is accompanied by poor health. In numerous other instances the general health may be good but the condition of the auditory organs, the throat, or the nasal passages may be a constant source of disturbance and fatigue through body poisons. Changes in personality are often caused by the influence of fatigue poisons in the body on account of the enormous expenditure of energy needed by the hard-of-hearing in efforts to keep up with the hearing; tinnitus or internal head noises which may be continuous day and night, year after year. These problems may be and frequently are present regardless of other types of good or ill health.

If the prognosis indicates that no improvement in hearing may be expected attempts to improve the general health and to eradicate throat and catarrhal conditions should be the first step in an attempted adjustment to a hearing loss.

Intelligence, a synesthetic type of perception, the receptive organs cooperating and matching, good auditory imagery, good visual imagery, and kinesthetic empathy may all be utilized if found within the hard of hearing person; if one or more are not found they may be developed to some degree in nearly every case.

The perceptual faculties which are lacking or atrophied may be compensated through (1) correct diet; (2) correction of defects in vision; (3) training of auditory attention in order to utilize the residual hearing; (4) vibro-tactile training; (5) motor-kinesthetic training; (6) rhythmic exercises; and (7) increasing the apperception of the individual.

When an improvement in health and perception has been acquired there is usually a new interest in achievement; this interest should be utilized at once. No matter how humble the abilities of the handicapped one may be he should be given something to do which is within his power to accomplish. One goal reached will serve as an incentive for striving toward a higher goal. He should be helped in finding a goal which will be a constant incentive. When the hard of hearing individual has determined his needs for leading a well-balanced life he should be directed into channels which will help him achieve that balance.

Potentialities without the individual which may aid in making an adjustment to a hearing loss:

Audiometrists	Otologists	Mental Hygienists
Bureau of Vocational Rehabilitation	Social Welfare Agencies	Clinics for the Hard of Hearing
Societies for the Hard of Hearing	Speech Reading Classes	Hearing Aid Distributors

The ideal community, from the standpoint of assistance offered to the hard of hearing, would have schools equipped with audiometrists who would discover a hearing loss before it has become incurable and before maladjustment has resulted in behaviorism; free otological care; understanding teachers and mental hygienists; individual and group hearing aids; speech reading and speech-correction classes; and tutoring when needed. Vocational Rehabilitation Bureaus, free hospitals and clinics, should be within easy access if not actually in the community. Hearing aid distributors should have offices, laboratories, repair shops and definite office hours. Agencies for social work should have a thorough knowledge of the resources in the community which are of special value in rebuilding the lives of the hard of hearing. A vocational training school, alone, cannot accomplish miracles except in rare instances. Equally helpless is the lip reading teacher or the hearing aid distributor in a community where there are no cooperating agencies for repairing physical and mental defects.

Adjustment to a hearing loss can be brought about through:

Mental rehabilitation; personality guidance, mental hygiene.

Educational rehabilitation; training of the perceptual faculties, training the residual hearing, voice and speech correction, basic lip reading for communication in every day associations with others, training in the use of a hearing-aid.

Skill rehabilitation; vocational guidance, vocational training, vocational lip reading, and the use of a hearing aid in industry.

There should be cooperation with colleges, universities, and adult education supervisors in order to secure well-trained audiometrists, mental hygienists, teachers, social workers, and needed classes.

In order to help the hard of hearing, the schools, colleges, universities, the school administrators, vocational trainers, the public, and employers are in need of socialized education and specialized education. The California State Department of Education has the facilities for working out the above program; many elements are already offered in various schools and institutions of higher learning but have not been directed into channels which will bring the maximum benefit to the hard of hearing.

Much has been written and said in regard to hard of hearing persons who were "restored to their families" after having learned lip reading, or, put on a hearing aid, or, joined a social group for those similarly handicapped. In this connection the term "restored" is usually interpreted as meaning that they are once again willing to take part in some of the normal activities of family life; they are not so bitter in their attitude toward their loss of hearing; they have an easier method of communication with their fellow-men. This change is not enough, this type of restoration will not meet the modern demands for human efficiency.

In order to take their places in the world of today and tomorrow, the hard of hearing must be restored to full participation in economic and social life. In generaly they have been retarded by outmoded ideas as to their capacities and a lack of effort in determining what their abilities may be. Compared with their potentialities, restorations have fallen short in achievement. Only a little has been expected of them; perhaps they cannot contribute to the welfare of society in just the same way as can one without a handicap. But they should not, for one moment, expect to give less than their remaining abilities will permit. They must learn to estimate their abilities and prepare themselves to meet the future demands of civilization. They must know that every individual is valuable to society and that the waste of the potentialities of one person cannot be tolerated. This knowledge, in turn, will give them a feeling of self-appreciation, of confidence, and a motivation for doing their share of the world's work. Their changed attitude toward their own worth will lead them to search for other channels which will help them increase their efficiency.

Bibliography

A. Books

Bowden, A. Orlando, and I. R. Melbo, Social Psychology of Education. N. Y., McGraw-Hill, 1940. 296pp.

DeLand, Fred. The Story of Lip Reading, Its Genesis and Development. Washington, D. C. The Volta Bureau, 1931. 232 pp.

Ewing, I. R. and A. W. G. Ewing, The Handicap of Deafness. London, Longmans, Green, 1938. 237 pp.

Neuschutz, Louise M. How to Help Your Hearing. N. Y., Harper. 1940. 179 pp.

Phillips, Wendell Christopher, M. D., and Hugh Grant Rowell, M. D. Your Hearing, How to Preserve and Aid It. N. Y., Appleton, 1932. 232 pp.
Thorpe, Louis P. Psychological Foundations of Personality. N. Y., McGraw-Hill, 1938. 602 pp.
Wheeler, Raymond Holder, and Francis Theodore Perkins. Principles of Mental Development. N. Y., Crowell, 1932. 529 pp.
Pintner, Rudolf, John Eisenson, and Mildred Stanton. The Psychology of the Physically Handicapped. N. Y., Crofts, 1941. 391 pp.

B. Periodicals

Miller, Mary Rogers. A Supplement to Hearing; the Earphone. Auditory Outlook, 4:442, Dec. 1933.
Norton, Theodore E. An Eye Story about Ears. Volta Review 39:94, Feb., 1937
Timberlake, Josephine B. The Re-education of Residual Hearing, Volta Review, 39:349. June, 1937.

C. Publications of Learned Organizations

A Conservation of Hearing Program for Los Angeles County, Published by the Office of the County Superintendent of Schools, Los Angeles County, California; National Defense Monograph, October, 1942. (h-6)
Washington, Margaret L. Vocational Rehabilitation Helps You to Help Yourself. Proceedings of the Twenty-First Annual Meeting of the American Society for the Hard of Hearing, Washington, D. C. 1940. pp. 16-19.

D. Unpublished Materials

Dohr, F. William. Some Personality Difficulties in Re-training the Hard of Hearing, paper read at program of the California Conference of Social Work, Long Beach, Calif., May 6, 1941.

A VISUAL HEALTH PROGRAM IN PUBLIC SCHOOLS

Mrs. Vivian E. Beard, teacher, El Monte Union High School

Schools now have a common purpose -- intelligent, complete cooperation in the war effort. Considerable planning is being found necessary to meet war emergencies. We are finding need for a change of emphasis in our programs. Some aspects of education are having to be modified or redirected, some are having to be strengthened and expanded. Certain lacks are being recognized, considered, and we hope, remedied. From the Educational Policies Commission of the N. E. A.,[1*] from a recent inquiry conducted by the American Council of Education to discover what officers of the Army, Navy and Marine Corps thought were the greatest needs of young people today, from Witty and Kopel,[2] Eames,[3] Betts,[4] and many others, has come expression of a need for much greater emphasis on a program of physical fitness.

Dental defects, poor vision, and malnutrition have been common causes of rejection for military service. According to a preliminary survey made by the Selective Service Headquarters, Washington, D. C.,[5] poor eyesight causes the highest total of rejections for any cause -- with the exception of bad teeth. Thirteen per cent of draftees rejected as physically unfit, are rejected for defective vision. Dr. Glen Trumbull, Manager of National Better Light - Better Sight Bureau, says,[5] "While teeth can be repaired or replaced so that their owner's health will be up to army standards, there appears to be a substantial number of cases where too long eye neglect and poor seeing conditions have impaired the standing and efficiency of these young men."

When men rejected for visual handicaps are returned to civilian life, their services are limited by reason of this very defect. If they are employed in defense industries they interfere with production of materials needed for defense because they are unable to produce as fast and efficiently as they would with normal eyes. These workers can be only as efficient as their eyes, regardless of their knowledge or of the skill of their fingers.

Education is accepting the challenge! The Educational Policies Commission[1] in stating its war policy for American schools says, "The physical deficiencies of youth, particularly those involving dental defects, poor vision, and malnutrition should be detected by teachers, school nurses, and physicians, and wherever possible, remedied by effective follow-up, medical advice, and treatment." It further adds, "Thorough physical examinations, with systematic and vigorous follow-up to secure the correction of remedial defects, should be given to all children on entering school, and at intervals of two or three years thereafter. The pre-school health roundup might well be paralleled by a final health check-up for all youth on leaving school."

The urgency of adopting our programs to better promote health and physical efficiency has been forced upon us by the war. Our health programs have come under closer scrutiny than ever before and have been found lacking. The value of a well-rounded health program has long been recognized but its organization has developed with varying degrees of thoroughness and efficiency.

Dental clinics have been set up in many schools, corrective posture classes are being held, parents are being educated in order to extend their knowledge of the means of promoting the health of their children, boys and

---

1* References are to the numbered bibliography at end of paper.

girls are being instructed in good health habits, their play is being supervised, but -- what is being done about the vision of children?

Visual health is an integral part of the general health -- physical and mental. Good vision is a major factor in efficient and satisfactory living. It affects our personality, our learning and our working.

A child with visual difficulties may seem stupid, unwilling to concentrate or irritable and our lack of understanding as to the physical reasons for his conduct may give rise to various kinds of personality difficulties. Problems in mental hygiene may become so deep-seated over a period of time that correction of the causative defect may not overcome them. On the other hand, correction of difficulties has often produced a complete change in a child's personality. After a little boy in our school had undergone an operation for strabismus (crossed eyes) he began to be accepted by other children and was no longer tormented by their unkind remarks. He ceased to be sarcastic and troublesome and became a happy, friendly, cooperative child.

Visual difficulties bring hardships into the securing of an education. Various studies have been made to discover the relationship between vision and learning, and vision and reading. The data are conflicting and are still insufficient to prove that defective vision causes retardation of large numbers of school children. But it has been quite generally proved that it is a contributory element in individual cases of retardation, and that many children are able to achieve normal or accelerated status only by compensating in some manner for their visual handicaps. Often, however, numerous nervous disorders result from the strain involved in making adjustments for eyes operating at a visual efficiency far below normal. Learning is achieved at a costly price when unknown visual difficulties are causing nervousness, discomfort, headaches, fatigue, difficulties in concentration or remembering, seeming stupidity, and misunderstandings.

It is challenging to contemplate what might be attained by the retarded or how many might achieve normal status if their defects were corrected. There might also be even greater achievement by the non-retarded if their defects were overcome!

Recognizing the need for a sound visual education program, we now face the problem of adequately providing for this need. How may visual efficiency be promoted and safeguarded for the sake of the child, the school and society?

Administrators, school physicians and nurses, teachers and parents will first need to have some common understandings in relation to vision and visual processes. Then a program may be planned in the light of this knowledge.

Leading vision specialists and educators are now looking back at the mistakes of the past. They realize that the blame for the present system of care for the eyes of our children is due to the fact that all persons, since the advent of glasses, have desired but one thing from glasses -- eyesight! After the glasses brought good sight, there was usually a demand that the eyes feel well, but few persons, if any, have ever asked that glasses make the eyes strong or that the wearing of glasses improve the eyes. As a consequence, professional men, both medical and non-medical, have devoted their lives to

"making people see better," with no thought to doing more than improving vision.

There has been a great change in thinking, of late years, relative to the proper place of the professions in the matter of preventive work in the visual field. It is now recognized that there is more to seeing than just fitting glasses. As an outstanding example of progress, may I cite the case of Patricia, a charming, intelligent high school senior whom I referred to Dr. Jaques this year for a visual examination. In February, 1943, he found that with her right eye she could read one letter of 20/30 and all of the 20/40 letters. With her left eye she could read one letter of 20/40 and 5 out of 6 letters of 20/50. The diagnosis was "slight myopia, exophoria, accommodative insufficiency at the near point, dilated pupils and many thyroid and pituitary signs." Dr. Jaques referred her for a basal metabolism test which was -12. She has been taking shots and vitamins and a vision test in June revealed 20/25 vision for both right and left eyes. Patricia is a beautiful girl and had feared having to wear glasses. She and her mother are extremely grateful that Dr. Jaques conserved and improved her vision by finding the basis of the difficulties. Had she been fitted to glasses because of her slight myopia, it is reasonable to believe that the myopic condition would have increased and she would have gone on wearing glasses indefinitely. It is encouraging to know that some vision specialists no longer regard the fitting of glasses as the cure for all troubles.

The more agressive professional men are thus broadening the scope of their work. And today's truly wonderful progress has come from the division of the problems of visual testing and seeing care into three separate and distinct parts instead of just one main part.

I shall attempt to explain: The exact center of sight, in the back of the eyeball is a spot called the Macula. The macula is a tiny area which is crowded with Cones of Sight. About four thousand of them are crowded into a spot no larger than the head of a pin. This is the part of the eye used in seeing letters. And it is this part of the eye which the doctor tests when he asks, "Can you see or can't you?" This was the entire concern of professional men up to the turn of the century. It is still, today, the entire practice of too many eye doctors and optometrists.

There is another and equally important part of seeing or sight called the fields of vision. All the rest of the back of the eyeball is lined with a retina which is filled with rods of vision with an occasional cone of vision. The fields of vision have many duties. The brain uses them in many ways as seeing centers of the mind.

Some of these duties are perspective, stereopsis or depth perception, judgments of size, shape, height, distance, orientation in space, color, and all movement. In addition, the two eyes, as a team, are held together and images are fused into one by the two fields of vision acting in unison. And it is in the fields of vision that we first see and become aware of objects in space which might interest us, might endanger or might destroy us. Perfect letter sight would render us helpless without fields of vision to discover new worlds to see.

The third and equally important department of seeing is that of the turn-

ing muscles. When the fields of vision announce that there is something of interest in the offing, the mind sends signals to the turning muscles of the eyeballs to turn the eyes toward that object. Clear, single, and perfect eyesight comes when the eyeballs turn to a given point and hold the center of sight steady and still.

The center of sight, cone vision, is efficient when the eyes stand perfectly still. If a person is traveling at the rate of 50 miles per hour and reads a sign by the roadside, his reading of the letters is only possible by virtue of the fact that the muscles outside of the eyeballs give and take in such a way that while his body is moving along, the maculae are looking steadily and without movement, at the letters.

Briefly then, the macula or cones vision department giving us letter vision; the fields of vision giving us vision of motion, size, shape, and the whereabouts of things in our world; and the turning muscles acting as the mind dictates constitute the three factors to be considered in visual testing and seeing care.

The retina of the eyeball is an offshoot of the brain and is a nerve. The focus muscle of the eyeball is a tiny muscle akin to the heart and other muscles of the body which are not subject to the will. These two departments of seeing are autonomically controlled; that is they are beyond conscious control.

The turning muscles of the eyeballs, however, are consciously controlled. We turn our eyeballs when and where our minds desire. They act with dispatch and skill in accordance with their ability acquired through training and experience.

The turning muscles are scarcely ever considered in the testing of young children. And yet leading vision specialists are of the opinion that failure in the skill and training of these muscles is the basic cause of most of the need for glasses amongst our present day school children.

It is now known that skill in turning and poising the eyeballs is acquired and can thus be learned and taught. Since I wish to clarify the need for visual training in our schools, I should like to discuss further at this point the significance of certain teachable visual skills related to the turning muscles.

At birth, the mind does not even know how to turn the eyeballs. A light or a bright object flashed to the right of the baby causes the eyes to turn to the left until the child learns better. From about the age of six months to two years convergence begins to develop. If an object is placed within arm's length of the little child, his two eyes may turn inward toward each other or converge in order to focus on the object. Focusing at far or near is not done automatically. The eys cannot change focus from far to near without a command from the brain to do so.

An illustration may clarify just what is taking place when convergence occurs. If one holds up the finger of the right hand at arm's length, he will see but one finger with binocular vision. Without changing the fixation of the eyes, if one brings up the forefinger of the left hand half way between

the eyes and the other finger making the two fingers in line, he will find that the nearer finger appears to be double. If he changes fixation to the nearer finger, then the far finger will appear to be double. This is evidence that we are at all times "seeing double" but we have learned to inhibit the sensation of double imagery and interpret only the single image of the object which we are consciously regarding.

The ability to form a single composite image or to fuse is truly a marvelous thing. The child is supposed to begin to fuse at about six months of age. His fusion ability is developing from then until at least six years of age. It behooves parents and teachers to discover whether or not the little child has learned how to fuse or whether his fusion ability is good, bad, or poor. Fusion is a visual skill which must be learned by repeated efforts if satisfactory binocular vision is to be attained. If it cannot be learned, double vision or diplopia results and since this is an almost intolerable condition, the eyes make various forms of adjustments to secure the comfort of single imagery. The smart little fellow may turn one eye in or out to get it out of the way. To further reduce the interference the inturning eye may become partially blind due to non-use. In eyes which do not turn in or out and which appear to coordinate properly, there often develops a suspension of vision in one eye, leaving the other eye to do all the work. Many records show that children who have perfectly good vision in each eye are using but one eye at a time. Sometimes a child will be able to read about a line or so with one eye and then the other eye will come in and confusion will reign.

Fusion is, according to Dr. Jaques,[7] " a faculty that is inherent to man but is not present at birth. It is something we must <u>learn to do</u>, just as surely as we learn to walk. Anything that we learn to do can be taught as a skill. Any skill that is acquired by chance can be trained to better performance."

What does fusion give us that makes it so vital? It gives us judgment of distance, judgment of height, judgment of shape and location of objects. So, through single binocular vision we have depth perception or stereopsis. This ability gives us supremacy over the creatures of the earth because animals do not have stereoscopic vision. It gives us reasonable assurance that we may drive our cars safely or pilot our planes successfully because we can judge distance and height.

Fusion introduces another marvelous ability, that of ignoring everything except that to which we direct our attention. We call this ability "Visual Selectivity." It enables the child to ignore the line of print above or below the line he is reading. This is also an acquired faculty and so can also be trained when it is weak.

Poor fusion increases the difficulty of study and decreases the amount of material that can be covered efficiently in a given period.[8] Studies have shown that those doing poor school work have been found to exhibit lower power of fusion convergence than those pupils who are progressing normally. According to Eames[8], loss of fusion produces mixing of letters and small words, jumbling of words, loss of place and some inability to follow a line of print.

Dr. Jaques[7] says, "If this function called fusion, which takes place back

in the mind is not co-ordinated, it may take as much as 50 per cent of our ability to learn." Children may appear retarded and lacking in ability just because they must spend so much time and effort controlling their two eyes. When so much effort is expended in order to see properly, little effort remains for interpreting what is seen.

Another visual function known as accommodation should demand some of our attention. This is the ability to alter the focus of the eye mechanisms quickly and accurately in order to obtain a sharp, clear image on the retina. We accommodate well when we can keep the image clearly focused on the retina whether or not the object of regard is at optical infinity or within our ordinary near-point range.

During the time between the ages of two and six the ability to accommodate is being added to the ability to converge. It is quite a simple process to accommodate for objects at far point, but it becomes quite a complicated process to accommodate for objects at near point. Accommodation and convergence should be exactly synchronized, automatic, and effortless. During the period of growth of this highly developed relationship, care should be exercised to avoid incorrect posture in play, improper lighting, and the requirement of persistent seeing at any near-point position. Because accommodation is affected especially during diseases such as measles, diptheria, scarlet fever, smallpox, and whooping cough, it is very important to determine whether accommodation ability is normal again before near-point work is resumed after such illnesses.

This very incomplete analysis of some phases of the visual process may give us some basis for planning a more complete program to safeguard and promote the visual health and efficiency of children in our schools.

To insure the success of our planning, certain steps might well be followed. Briefly these might be:

1. Adopt aims, such as
   a. Determination of visual readiness for the reading of printed word symbols.
   b. Discovery of visual handicaps which may warrant referrals, adjustments, or visual training.
   c. Dissemination of knowledge concerning factors underlying or contributing to visual health and efficiency.
2. Secure the understanding of associates, as teachers, counsellors, parents and students.
3. Secure administrative approval.
4. Secure the approval and cooperation of the present nursing or medical staffs.
5. Select leadership trained for such work.
6. Provide for reorganization of present instructional programs in order to provide for new objectives.

7. Provide for space and secure proper equipment to adequately carry out the proposed program.
8. Plan visual testing program.
9. Plan means of using test information to provide for individual visual needs, by

   a. Letting "Visual Readiness" be one factor in determing readiness for reading printed word symbols.
   b. Referring cases which warrant further examination to vision specialists
   c. Making recommendations to teachers, counsellors and parents, suggesting adjustments necessary to meet visual needs.
   d. Providing a visual education program.

10. Disseminate knowledge to develop an awareness of factors contributing to visual health and efficiency.
11. Plan frequent re-testing and observation to determine progress made.

There has been much superficial controversy over the methods of conducting vision tests. Many schools have long used the Snellen Chart for testing but it is generally agreed that this test is insufficient and unreliable. It is inadequate since it only reveals visual acuity. It is unreliable becuase it is subject to faulty procedures, such as inaccurate measurement of the 20 ft. distance, poor lighting and the opportunity given the children for memorizing the charts.

The Betts Telebinocular has been approved by numerous educators and vision specialists for school vision testing. It reveals nine kinds of visual defects which are of such significance that they should be discovered in a good test. The Betts tests measure visual acuity; refractive errors including myopia or near sightedness, hyperopia or far sightedness, and astigmatism; fusion, eye-muscle imbalances including strabismus (crossed-eyes), esophoria, exophoria, hyperphoria and hypophoria; and stereopsis.

The Telebinocular tests have been criticized by some who say that the results refer too many people to a specialist. In connection with this criticism it is well to remember that many vision specialists do not understand the system and resent the seeming intrusion of the schools into the medical field. And some doctors who are practicing as eye specialists do not recognize or understand the functional aspects of vision.

Perhaps criticisms were made when an unqualified person had given the tests. Testing should only be in the hands of a physician or other specially trained person, and not for the general use of teachers.

An adequate system of vision measurement may well lay the foundation for the work of providing for individual needs and differences. We shall consider briefly the four ways already suggested in which test information may be utilized as a guide in caring for visual needs.

Test results will reveal a "visual readiness" for reading printed word symbols. It is accepted knowledge that a child must be ready for reading printed word symbols before effective learning can take place. This readiness involves maturation in four major areas: mental, emotional, physical, and experimental. We shall consider merely the significance of visual

maturation for visual immaturity may inhibit the whole process of reading.

We need to be certain that the little child's eyes are working together as a team, that the visual skills of fusion, and stereopsis or depth of perception have been adequately developed. "At six years of age, the age when children are expected to begin reading printed word symbols, only 40 per cent are able to fuse images automatically."[2] Cole[9] says that only 20 per cent have absolutely normal, fully developed eyes. About 15 per cent are near sighted and 40 per cent have some degree of astigmatism. From 60 to 80 per cent are far-sighted.

Far-sightedness is a normal condition of early childhood but it means that the eye coordination, which is required for noting fine details such as differences between words and letters is not fully developed. The little child, therefore, often has difficulty in distinguishing between b and d, m and n, no and on, or other confusing similarities.

Cole says that about 20 per cent of the six year olds show some muscular imbalance. We have already discussed the use of the muscles in the visual skills of accommodation, convergence and fusion. Children often lack coordination of muscle control and it may be quite as true of their use of eye muscles. As a child matures the eye muscles grow stronger and it may then be easier for him to focus his eyes. Perhaps, in some instances, a child needs to be taught how to use them.

Cole believes it is probable that at the entrance to school "not far from 50 per cent of children have eyes that are either too immature or too defective for the strain of reading."

Our visual tests, then, will reveal visual immaturity or difficulties which certainly should be evaluated carefully at the time of beginning reading. Most children merely need time in which to grow or help in developing the visual skills so necessary for success in their entire school career.

Our second suggestion for the use of test results is for screening purposes. Vision tests will reveal weaknesses which should be referred to a vision specialist. When referrals are made it is well to remeber that it is professional etiquette to suggest the names of several specialists to whom a child may be taken for further examination.

A third proposal for adequate use of test results is that they serve as a basis for suggestions or recommendations to teachers, counsellors and parents. Certain adjustments or procedures may be required or there may be merely a need for watchfulness in order to safeguard and improve the pupil's visual health.

To be specific, the examiner would warn against too much close work and the need of specially good lighting if the child were myopic; it would be advised that the far-sighted or hyperopic child hold his reading material a good distance away. Proper posture and good lighting are of tremendous importance and should always receive uppermost concern.

In cases of muscular imbalance it would be suggested that there might be a vitamin A deficiency in the diet and the child and his mother would be

instructed about the foods containing this vitamin.

To the teachers of children who appear to be handicapped from too constant close work it would be suggested that provision should be given for frequent and periodic changes of fixation from near points to far points. Periods of relaxation when the eyes might "focus" on distant objects would afford an easy and natural method of relief from strain.

Teachers could well supervise relaxation through closing the eyes and palming if the examiner found evidence for such need. Relaxation and lessening of strain might also be afforded through definite provision for blinking or rotating the eyes. This would be particularly beneficial for the child becoming myopic from too constant fixation at near point. Simple finger exercises could be given by the teacher to develop fusion or overcome a tendency toward exophoria.

As a fourth means of utilizing visual test results we have suggested a visual education program. The value of orthoptics or visual training has been established but has not yet become a part of the visual health program in public schools. We know that the visual skills which affect perception are sensory-motor skills and are therefore subject to training. Dr. Burton Clark[10] says that one of these skills is the ability to focus quickly and accurately, another is the ability to make a good fixation with the two eyes, a third is the ability to maintain the fixation efficiently for whatever length of time may be required. Vision specialists, psychologists, and educators are agreeing that development of these skills is dependent upon training just as piano playing or typing, skating or dancing.

Visual training would preferably be solely in the hands of a trained person in the school, acting under the supervision of a vision specialist. It would be desirable for such a person to have had a certain amount of previous experience as an orthoptist. It is very probable that a person interested could obtain an opportunity to serve as an apprentice in the office of a vision specialist. The training offered the students might include the simple finger exercises already suggested for teachers to supervise, or the relaxation and rotation exercises.

It would certainly include the use of old-fashioned hand stereoscopes for children with fusion difficulties. The telebinocular could also be used for stereoscopic training. Results in the use of both for fusion training have established their value. The stereoscope guides eyes into proper place to fuse normally without effort. By thus repeatedly experiencing normal fusion the ability to fuse without effort is gradually acquired.

It would be beneficial to use a normalizer for school orthoptics. This electrically controlled machine puts pressure on the ability to maintain fusion. It is thus strengthened through difficulty. The machine brings forth a dilemma which the brain can solve by working harder than usual. This unusual effort or pressure is greater than will ever be needed in normal life; therefore, the patient has a reserve to fall back upon during fatigue.

A chiroscope would well be included. It is especially valuable for near-sightedness because the picture the patient is tracing is placed beyond focus and it requires effort to go out to it. It thus trains projection.

It also helps to overcome amblyopia and suppression.

A synchronizer which develops the pursuit reflex and provides physical exercise for the eyes would provide excellent training.

It is well to remeber that all factors of vision are influenced by training one.

It has been my privilege to initiate the development of a visual health program in an elementary school and to give visual tests and visual training both at school and at Dr. Jaques's office. Some 300 telebinocular tests given at school to those students referred by the school nurse or by teachers revealed very few entirely normal findings. There was need for much more visual training than time would allow. As it was, only the most urgent cases could be helped. Training consisted of finger exercises, work with the old-fashioned hand stereoscope or with the telebinocular which may be used for the same purpose, and rotation exercises on the synchronizer. Results were gratifying. One seven year old girl from the second grade had a high degree of esophoria and slight myopia. After 5 weeks training of 10 to 15 minutes daily, the muscular imbalance was very greatly improved and the myopic condition had disappeared. Other results were equally successful; some were less successful.

The greatest progress was made by those students who came faithfully each day and worked earnestly. Little Ruth Ann's success must have been in some measure due to her own interest and enthusiasm.

I am convinced of the value of a visual health program for grades 1 through 12. I am not discouraged because there are those who are uninterested, skeptical, or content with the sufficiency of their present programs. I am concerned that some administrators have not yet realized the scope of the problem and do not have sufficient vision of the good to be achieved to overcome their fear of endangering their own established positions or of increasing their present problems by introducing something new. It is to be regretted that some avoid the issue by saying that it is the responsibility of the home; that schools must not assume parents' responsibilities.

I am encouraged, however, to know that some administrators have caught the vision. They understand that the problem is that of visual education through visual training and the application of knowledge regarding visual health. It is not a problem of intrusion into the medical field. They are laying the groundwork now, studying the problem from its various administrative angles, waiting for further clarification and amplification of ideas, and educating their boards and their parents so that they, too, may catch the vision.

For such administrators the institution of a visual health program is merely a question of wise timing for they know that the understanding and enthusiastic cooperation of an informed public will contribute to the future success of visual education in the schools.

And so we know that the time is coming when educational assistance will be given in teaching children how to see just as it is given in teaching them how to read, to add or subtract. We instruct children to insure the proper

development of abilities such as swimming and tennis which require rather obvious coordinations. The visual process is much more complex. We therefore eagerly await the time when we may insure its proper development through an adequate visual health program in our public schools.

Bibliography

1. Educational Policies Commission, A War Policy for American Schools, February, 1942.
2. Witty and Kopel. Studies of Eye-Muscle Imbalance and Poor Fusion in Reading Disability: An Evaluation. J. of Educ. Psych., December, 1936.
3. Eames, T. H. School Eye Testing. 1937 Year Book of Optometry, 117-124.
4. Betts, E. A. The Prevention and Correction of Reading Difficulties. 1936. Chic., Row Peterson.
5. Dr. John R. Whittekind. Introduction. Lectures, 44th Congress of the American Optometric Ass'n., June 29-July 3, 1941.
6. B. W. Kelly, Training Pupils to See. Claremont Colleges Reading Conference, 1939.
7. Dr. Louis Jaques, Lectures. Northwest Congress of Optometry, Seattle, 1938.
8. Eames, T. H. Low Fusion Convergence as a Factor in Reading Disability. Amer. J. of Ophthal., August, 1934.
9. Cole, Luella. The Improvement of Reading. N. Y., Farrar & R., 1938.
10. Dr. Burton Clark. Developing Visual Ability for Proficiency with Reading. Claremont Colleges Reading Conference, 1941.
11. Harris, Margaret N. A Study of Discriminations pertaining to Beginning Reading. Master's Thesis, Claremont Colleges, 1938.

CULTURE AND CONFLICTS
IN THE BACKGROUNDS OF BI-LINGUAL CHILDREN

Dr. A.O. Bowden, Department of Anthropology, University of Southern California

I. Culture Origins and Definitions

The very fact that we have in this country bilingual children necessarily means that we have in our schools boys and girls whose home backgrounds are at variance with the common traditions of us who have been brought up in an American home and in our American schools. And this variance commands our attention in this conference.

Before an understanding can be obtained it is important that we first lay out our definition of culture and how it grows and how individuals are made up of whatever culture they are permitted to absorb in their developing years. Contrary to popular notions of culture the anthropological concept of culture is more adequate for studying our problem. To them, culture includes all items, ideas, tools, weapons, utensils, language, techniques, habits, and theories developed and used by groups -- techniques and tools man uses which he did not bring into the world with him. Culture which is the result of man's attempt to solve his problems of living constitute the chief difference between man as a member of the animal kingdom and other vertebrates.

1. Obviously early cultures were very simple compared to our own complex culture. Primitive cultures being very simple were more unified than our own. That is, there was less divergence of purpose and pattern. This was necessarily true since the number of ideas and methods of accomplishing the hard tasks of earning a living were extremely few and crude. The possibilities of great differences of opinion as to what was the best method and the highest aims of life as in our own society were few. There was only one religion in any given group, nor were there many alternatives in theories and methods of governing tribes as in our civic organizations.

The greater the number of ideas and tools, the greater the possibilities for disagreement. Among us the number of complex culture patterns is almost infinite and hence many discordant elements which develop ferments and differences between individuals and groups even in the same society.

The early Christian Church supplies a good illustration of what we are saying here. Until the 16th century A. D. there was only the one Church in Europe and while few minor differences between certain intellectuals in the church existed, no fundamental disagreement as to the existence of God, Heaven, Hell and the necessity of trying to live the Christian life was present. With increased learning and travel on the continent new theories came and with them schisms in the church. Finally the great Protestant era resulted in the establishment of many minor and a few major movements in divergent directions from the orthodox teachings of the Catholic Church. Then we had only one main church around which all Christians rallied. Now we have some three hundred denominations or sects of the Christian Faith.

2. Inventions -- The Source of Culture. What is the cause of emergence of so much difference in the beliefs of groups? A consideration of this is a long and fascinating story and we will be able only to sketch it very briefly. In the first place, INVENTION is the source of all cultural

development. And we mean by invention the fusion of two or more ideas or elements of culture which result in something new both in form and function. Every one is in degree an inventor. Every person is capable of putting together certain ideas in an original way. Man's wildest imaginings and theories are inventions. But inventions do not have to consist of gadgets. Literature, music and all forms of art are inventions. So are theories and philosophies. They are tools to aid man in solving his problems. But an invention is not culture until it is accepted and used by his group. Culture, then, is socially accepted inventions. Culture is a social while invention is a social product. Culture grows and changes by the processes of invention, social selection and discard. When one invention supercedes another older one, it is discarded, often, and the new one selected. This is true especially in material inventions. One does not hesitate to discard the horse and buggy for the automobile. But in ideas, theories, language and techniques the change is more slow and cautious, especially regarding certain types of theories and practices.

3. Culture and Values. In processes of culture origin and growth are involved the values of society. Whatever one likes or dislikes he values. And the value is measured by the amount of effort or money he is willing to give in exchange to acquire or avoid it. Thus we have positive and negative values. These likes and dislikes fill the total environment of mankind and range all the way from something to eat to a song of sentiment or a glow of an inspired sunset.

Values lie wholly in the realm of thought and feeling, and, coming originally through services and experiences are handed on from one generation to another or are accepted from one individual by another. If things, ideas or techniques bring no satisfactions they have no positive value in human life. From a human standpoint nothing has value in itself. Worth is estimated only in terms of satisfactions of needs. And needs are of two classes. One includes all those things and services which actually are required by the human body such as food, sleep, rest, exercise, and sex. These constitute our biological needs. The other includes all items which the individual thinks he needs. And these are real and legion.

In simplest forms of human existence biological requirements of cultural survival were all important. Before the complex development of Neolithic culture, human needs even above the biological level were relatively few. But they increase in geometric ratio as man's inventive genius creates and adds these new combinations of ideas, theories and items which appeal to human interests. All our present values, then, come either from the remote or immediate past and all future values will necessarily have to grow from the present and the past.

4. Man a Tool-Inventing, Tool-Using, Tool-Preserving Animal. Of these the tool preserving is very significant from our viewpoint and in educational activities. This and our value systems come from the habit-forming nature of man. We like our habits, else we would tend to forsake them. We like to do the things in which we are skilled, habituated,and tend to resist change. We become attached to certain things, places and persons and build up sentiments in connection with them. This is a form of habit and is the source of our values. Things we value we struggle to preserve.

II. Modern Western Cultures Extremely Complex

1. Modern cultures and values tend to disintegrate. But even in any large group there are certain values, certain culture patterns which come in conflict with others, especially in modern complex society. Our major values, such as moral values, religious values we tend to preserve and others we try to stamp out through social or legal pressures. Problems of culture conflicts among primitives were not so serious as with us, for they had fewer items, fewer ideas and theories to fight over. But our culture is so complex now that there is possibility of some disintegration or perhaps there are certain elements which will now become dominant that were previously of little importance. It can be said that the more numerous the patterns of conduct and the more complex the organization, the greater the possibility of conflicts. In this realm of conflicting values -- culture patterns -- come all our juvenile delinquency and crime, split personalities and most forms of insanity. It is significant that very little delinquency is found among most primitive tribes and the reason is not difficult to find.

2. Culture of Western Society Becoming Global. With the rise and complex growth of modern western society culture is becoming no longer a community affair, but rather a global phenomenon. And this is due to our improved rapid means of transportation and communication. Forced into closer proximity many cultures and peoples have had to change their way of life and sometimes have become antagonistic to each other. In fact all antagonisms among us are cultural antagonisms -- ways of life in groups which we do not like.

It will be the responsibility of the schools in America, for example, to eliminate from our culture all "Little Italys," "Little Bohemias," "Little Norways," "Little Spains," etc., which in the past have plagued our great cities. These culture "Islands" or "Pockets" while of no serious importance when our life was more simple, are doubtless to become a greater source of unrest and intrigue in every country where they exist. It is in such areas that our bi-lingual problems arise. Our immigration laws operative in limiting the number of foreigners since about 1920 have lessened somewhat the problem as applied to certain groups of "foreigners," but the problem still exists.

3. Causes of Culture Conflicts. There must always be a divergence of values and often conflicts between culture patterns and their values in bilingual children. For, in the past, each different language in its native setting has a divergent cultural milieu from every other language group. One of the first steps in eliminating these conflicts is in supplanting the "colonist's attitude." We define the colonist attitude as that of a person who never forgets nor wishes to forget the culture, the language of the old country of his birth. His allegiance is to the home country whose culture and home values he assumes, are much superior to those of his adopted country. Until a few decades ago it was common in America to hear certain educated persons comparing old world values always to the detriment of American culture. In our early history this was justifiable since at that time America had not refined her own mores and values to their present standard. It is interesting that, historically at least, the English have been the great colonizers. The German people who have come over here, in the main, have shown the colonist's attitude to a marked degree. The Fatherland is dearer to them than any other place on earth. German culture, German values for them are superior to

anything in America. The same is true of Japanese in this country, even among those born in America. These are good examples of the causes of bilingual problems.

Americanization. The whole problem is one of Americanization. At the close of the First World War Americanization was a very popular fad in school and social work activities. But we made a very poor job of it and it should be a matter of grave concern now to the schools in America to set its house in order and to work in conjunction with federal authorities in eliminating it. Then we thought we were successfully Americanizing foreigners if we required them to learn some parts of the Federal Constitution and if they could learn to read and write English. Now the problem lies not in the fact that an individual speaks two languages. It is not wholly the language, though that is an effective weapon to use, but rather the culture and values of foreigners who come not only with a different language but also with a different value system. In fact the only satisfactory definition of a foreigner is in terms of culture. It is his culture including his language that makes him foreign.

Some Points of Culture Conflicts. What are some of the conflicts which grow out of the mixture of cultural values? Mores and moral values, standards of conduct in any culture differ in varying degrees from every other national group. Forms of government and ideas of freedom of the individual are other points of difference. Position of the individual in the family group also differ. Concepts of honesty vary. Religious tolerance between many immigrants and our traditional belief in the separation of Church and State are not the same. The peasant attitude common with many who come to us from Europe or Asia is not common in American life. We have no peasant class originally in this country. Ideas of freedom differ. The child who comes to school from a family from Italy or Germany or from several other areas of Europe and Asia brings these "foreign" values couched in different language with him to school. He soon picks up English and acquires some of the ways of American children, but he does not so easily throw off the differences in attitudes and values of the home from which he comes. Each of these homes, in the beginning on our soil, are little Europes -- little Italys, little Germanys etc. Children wish to be thought well of by American playmates, but they are forced to segregate themselves from their playmates on account of the fact that they are foreign and have "strange" ways of doing things. Our boys and girls show intolerances, too, and that drives the foreign children into out-groups and thus their Americanization is slowed up. We are as much to blame for this condition as the foreign children -- sometimes much more to be criticised. Such experiences have a deleterious effect both on American children and immigrant children. It develops conceit in our youngsters and a sense of inferiority in the foreigners. Thus the colonist attitude in the foreign born is emphasized. Here we have the source of mental conflicts, slums and social antagonisms. But if we feel impelled to cast blame we should really see that it lies as much upon us as on those who come to us. Herein lies the duty and responsibility of American schools. If our children are given a broader, social attitude toward the culture and values of foreigners they will have much better and more speedy results in Americanization. (This will have a longer discussion in conference.)

Implications for Education

From the foregoing brief outline of culture and its implications for

conduct it should be obvious that the school's duties lie in three directions. One, the mountainous accumulation of culture; two, cultures of other nationalities; three, teacher-training.

1. Mountains of Culture. Since our culture is growing at a geometric rate, the total culture of western civilization is assuming mountainous proportions. It is impossible for the schools to teach the whole of human culture for it is the accumulations of ages. And it is becoming necessary, therefore, to make a very careful selection of the material to be taught in our schools. Enough well selected materials to be taught in our schools for the curriculum should be taught to give our children some clear and sympathetic idea of the magnitude and importance of the study of culture. (Curricula are dead without a competent teacher and methods of creating attitudes cannot be separated from this discussion.)

Without adequate knowledge and familiarity with our own culture our boys and girls will be insufficiently trained for citizenship in our complex society. With the rapid growth of culture among us come many conflicting patterns and values for there are numerous groups which turn in divergent ways to find life satisfactions. These conflicting elements should be harmonized, and, where necessary, some should be eliminated altogether. To say nothing of those among the foreigners who come to us, what are some of these conflicting elements in our own culture?

For one thing the double standard of sex morality between men and women. Some have said that the chief trouble here is that women are mainly to be blamed since they permit a different standard among men and themselves. Our ideal in the past has been the permanence of family relations but in practice divorce is so easy, there is constant strife between many couples almost from the beginning of married life -- finally resulting in separation. The pattern of independent womanhood after marriage and that of devotion to the home are conflicting values. Career women concept is antagonistic to family life in the way we are considering it.

Probably a certain amount of conflicting political doctrines are good for the social order; there can evidently be too many and too violent opposition as the recent history of France indicates. We have a growing race conflict in this country. The Negro and other foreign elements are resurgent. Something will have to be done to lessen these conflicts. It should be observed that race prejudices are culture prejudices.

Economic independence is one pattern ideal. This is in conflict with economic interdependence. Rugged individualism is conflicting with social integration and too much of either would be deadening to any free society. It would require a dictator to streamline all such conflicts of political and economic doctrines and that is exactly what we do not wish -- a dictator. But we have not yet been able to learn how much freedom and how much control to exercise. These evaluations should be the result of a properly educated citizenry. This knowledge and wisdom come chiefly from school and home. Passing laws will not solve the problem.

The concept of individual rights and corporation rights are in sharp differences and most of our labor troubles originate from such conflicts. These are a few instances of conflicts in our own culture. Many, even

hundreds may be listed. But these are enough to indicate the trend of our modern life. Some evidence exists that we are going through a period of social disintegration which is due mainly to our lack of understanding of the nature of culture and the dominating influence it has upon every individual. We need not look to the solution of these problems through biological heredity.

Understanding of Foreign Culture. Not only should we know the whole of our cultural configurations, and numerous tendencies for disintegration present with us, but we should eliminate enough of our sometimes futile attempts at teaching much useless material in order to give more room in the day and in the school life of the child to study of foreign cultures with a view to developing a better understanding of all peoples and especially in helping to grow much greater tolerances for peoples whose culture differs from ours. It is good that this conference and many similar groups are starting in this direction, but there is yet woefully little being done compared to the task before us. (Discussion of concrete examples follows.)

The Insistent Problems of Teacher-Training. And finally we come to the most important factor in all this grand scheme of study and understanding -- THE TEACHER. Some one has said that the teacher is the best curriculum and the most effective way to revise curricula is in the selection and training of superior teachers and the needed increase in pay.

It should be evident to all that the important thing is to make teaching of culture of all peoples both ancient and modern so broad that children will understand just as one must now get an understanding of world culture. This is especially true of our continental culture since we must live closer to each other and to cooperate in our daily lives more intimately than peoples farther removed from us.

EVALUATION OF READING IN THE SCHOOLS PROGRAM

Willis W. Clark, Director of Research and Guidance
Los Angeles County Schools

In introducing this topic, it may be well to mention three basic facts which should be remembered:

1. Each pupil must do his own learning. Thus his particular strengths, weak-weaknesses, ar' needs should be known in order that the teacher may guide his learning.

2. There are individual differences in ability. Thus it is essential that the characteristics and abilities of each pupil be determined so that assignments will be suitable and the expectation of accomplishment will be reasonable.

3. Teachers are usually assigned to a particular grade and receive new pupils each year. Thus it is highly desirable that teachers be provided with an efficient method of obtaining insight into the educational needs of the pupils so that a constructive program may be conducted.

A realistic approach to the problem requires that a school shall have an acceptable administrative policy. School administrators should:

1. Establish a sound promotion policy. Acknowledge the facts that there are individual differences among pupils in a given "grade." Recognize that the "grade" is an administrative device for the classification and grouping of children for instruction.

2. Expect that both grade or class groups and individual pupils will vary in accomplishment, since pupil development and learning are dependent on ability and background of experience. The "normal" range of ability and achievement of pupils in any grade is several years. The median accomplishment of a grade may (if pupils are particularly low or high in ability) vary as much as a full year or grade above or below the norm for "average" classes.

In considering the evaluation of reading it is necessary to consider the purpose and nature of the reading process.*

The place of reading in modern life. Reading is an accomplishment that is essential in modern life. An adult who cannot read is at a distinct disadvantage in many situations, particularly in communities where the percentage of literacy is high. Learning to read is an important activity of the school years and rightly so. Youth needs to be able to read for the same reason that adults do -- to command a recognized means of finding out what they want to know. Their wish to read for particular purposes furnishes strong motivation that is effective in keeping them happy and successful as they are acquiring the intermediate skills that culminate in mastery of reading.

---

* A considerable portion of the materials presented in this report has been prepared for other purposes in collaboration with other members of the Division of Research and Guidance.

When pupils enter the high school, for example, it is commonly assumed that they have acquired satisfactory mastery of the reading skills, yet many pupils come to the high school with only moderate and even poor command of these skills. The high school finds it cannot justify the omission of instruction in reading by appealing to the tradition that reading is an elementary school subject. It frequently finds it necessary to employ procedures for and methods of discovering the abilities of the different individuals and for providing instruction which will more adequately equip individuals deficient in reading to deal with school assignments.

Individual differences and the reading situation. Ability to read depends upon a number of factors of prime importance among which is the degree of mental maturity of the individual. In all types of growth that have been measured it is found that wide individual differences exist in the rate and extent of growth and that a given individual in comparison with other individuals does not grow equally rapidly in all phases of development. Individual differences are apparent at birth and become more evident as the individual grows older. Various functions develop at different rates and reach their maximum at different times. Individuals of the same age differ greatly in every characteristic that has been measured or estimated -- in height, weight, strength, and susceptibility to disease; in nervous stability, in mental development, and in mental balance. Individuals differ in ability to tolerate thwartings -- to make mental adjustments to perplexing situations. Some are very stable in performance under extreme effort; others when strongly motivated become confused and show a decrease in efficiency. Again some are disturbed by factors which stimulate others to their best effort. Individuals differ in their response to the most important and prevalent human motives. In studies on motivation it has been found that some persons require very little motivation to put forth their best effort while others require considerable.

Individual variations are found in the ability to acquire knowledge and skills. In the same school grade, pupils differ in their ability to acquire the skills necessary to get thought from the printed or written page. It has been shown that the most rapid reader in a grade covers nearly twice as much material in a given time as the poorest; the pupil best in reading comprehension knows twice as many words as the poorest; the best speller correctly spells three times as many words as the poorest -- all factors related to the outcomes in reading.

These differences exist and represent a normal situation. It is important that teachers and school administrators recognize this fact and make proper provision for these differences in the educational program.

Factors Involved in the Reading Process

Reading is a complex process of symbol interpretation -- a combination of skills involved in developing perceptions from printed symbols to a mental response. It is not an instinctive or a reflex response, but is an acquired process involving a number of highly complicated specific skills which must be integrated for successful mental processing.

Basic to the development of reading skills are:

1. The physiological factors of eye-muscle control and voice-muscle control. Skill in reading, which is essentially speed in word recognition, together with comprehension of word meanings, involves the training of the retinal nerve endings to work together on the letter forms and combinations which make words. Word recognition, therefore, is a process of the habitual coordination of the retinal nerve endings. Since a single eye fixation cannot in the beginning include several words, the reading process is essentially a blending or fusing of the meaning of each perceptual field with that of the preceding one. Few normal children, probably none, learn exclusively through the eye, ears, or kinaesthetic sense. The use of all the perceptual avenues of approach to the brain -- through hearing, seeing, feeling, moving, touching, testing, -- increases the vividness of the stimuli.

2. The psychological factor of mental maturity. This factor relates to the degree of attention necessary for learning, the formation of fixed sound-sight and sight-motor associations and word meaning and adequate development of the process of recognition, retention, and recall. Reading makes demands on the power of knowing and thinking, and involves the higher mental processes -- reasoning, judgment, and interpretation. Since reading is an intellectual process the degree of mental development of learners is an important factor in success not only for young children, but for pupils who are chronologically older but who are retarded in their mental growth.

3. The social factor. This includes a background of rich experiences, vocabulary sufficient to sense the meaning of words and word groups, ability to speak with ease and freedom, and desire to read for some purpose.

Like all learning, reading is the combined produce of (1) physical, mental, and social growth and development, and of (2) instruction and training. Learning proceeds best when interest is stimulated and when the need for the skill to be acquired arises. Interest directs and focuses attention, and together with need motivates the learning more strongly than any artificial stimulus. The reading activity is most fruitful of results when adapted to the capacities of the learner and when suited to his maturation level.

Essential Skills Basic to Silent Reading

The following outline is summarized from the Analysis of Learning Difficulties of the Progressive Achievement Tests and is believed to represent essential elements in silent reading ability:

1. Reading vocabulary This attainment involves the gradually developed ability to:

a. Discriminate word forms.
b. Recognize words.
c. Recognize word meanings -- symbolization of common objects, relationship of opposites and similarities, mathematical terms and symbols, the vocabulary of natural science, social science, and literature.

2. Reading comprehension. This achievement involves the gradually developed ability to:

a. Follow directions -- simple, those requiring choice, and those involving reading definitions.
b. Understand directly stated facts and the significance of question and answer.
c. Interpret meanings -- make inferences, select topic sentence or central idea, comprehend the author's organization of topics, and follow the sequence of events.
d. Use reference skills -- parts of the book, table of contents, index and references.

Another analysis of reading skills appears in the 1942 Edition of the Los Angeles County Course of Study under the sub-title: Reading for Information: Scope and Sequence of Skills in Reading. "Reading for information cannot be treated 'generally'; it calls for specific skills." Analysis of these skills follows. The grade placement was based upon (1) the mental maturity of children, and (2) the relative difficulty of the items included.

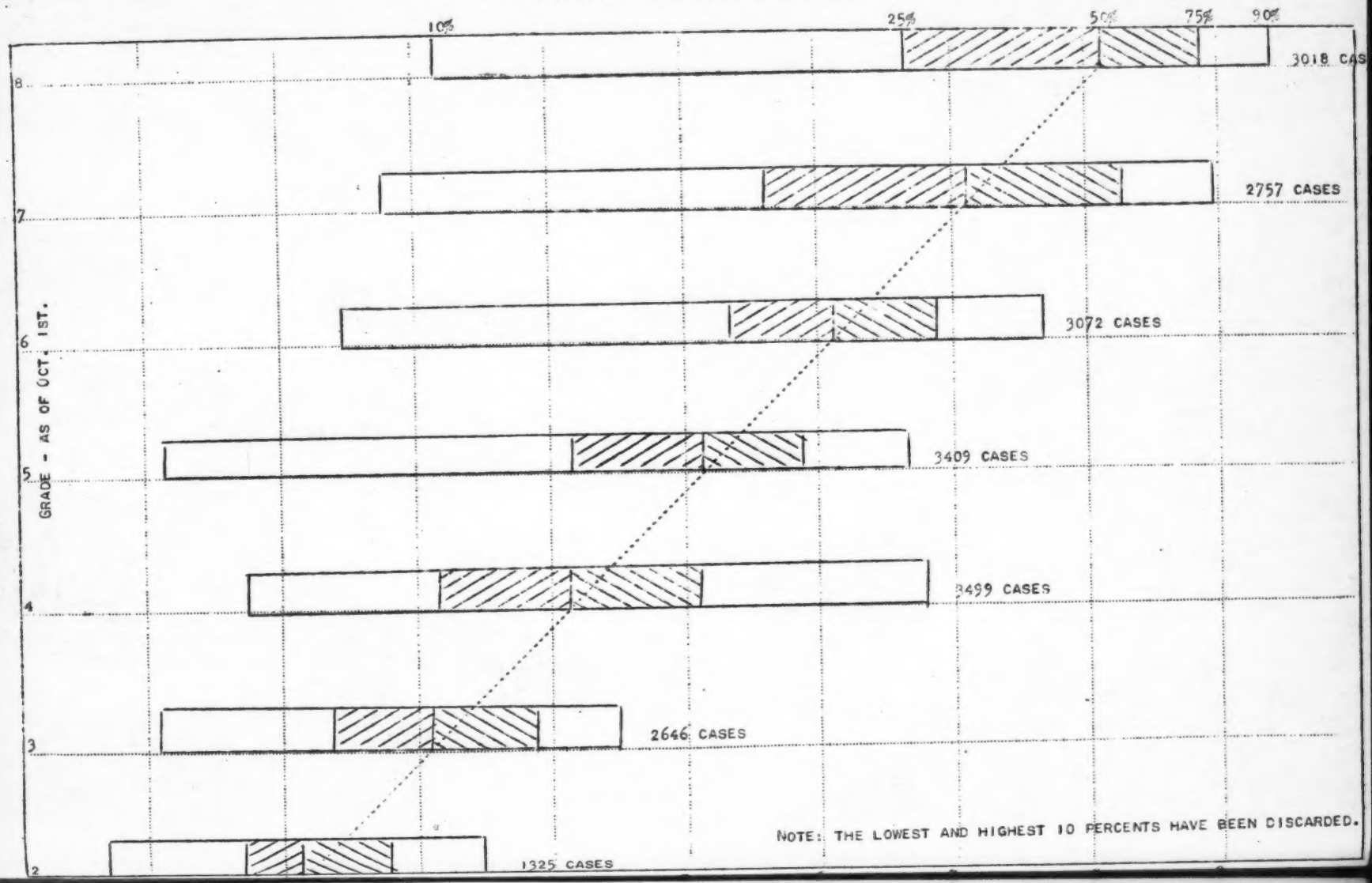
SKILLS IN READING FOR INFORMATION	1	2	3	4	5	6	7	8
Find answer to specific question		x	x	x	x	x	x	x
Read simple directions		x	x	x	x	x	x	x
Follow a sequence of related events		x	x	x	x	x	x	x
Identify fact or fancy		x	x	x	x	x	x	x
Compare and check information against other facts heard or read or observed		x	x	x	x	x	x	x
Select facts to prove a statement			x	x	x	x	x	x
Note extent to which selection answers question or helps solve problem			x	x	x	x	x	x
Read to check correct form, as of social and business letters				x	x	x	x	x
Judge appropriateness and validity of materials in reference to problem				x	x	x	x	x
Read to select definition					x	x	x	x
Identify supporting details of a main point or idea					x	x	x	x
Make inferences from facts that give indirect information					x	x	x	x
Determine essential conditions of a problem						x	x	x
Note recency of publication						x	x	x
Find objective evidence in terms of problem requirements						x	x	x
Discriminate between reliable and unreliable information						x	x	x
Discriminate between statements of facts and opinion						x	x	x
Detect discrepancies, partial truth, and distorted statements							x	x
Read for gist							x	x
Determine author's aims								x

Variation in Pupil Accomplishment in Reading by Grades

The variation in achievement of pupils assigned to given grades has been repeatedly presented in educational research literature. It has been demonstrated beyond peradventure of a doubt that the grade placement is not a criterion of reading accomplishment or skill. This situation is again verified by data regarding the reading comprehension skill of several thousand pupils as shown by the accompanying figure illustrating the variation in grade placement in reading comprehension. Similar data * for 11,600 high school pupils are presented in Table I. Any given pupil may have competency varying from that of pupils several grades below to those several grades above his actual grade assignment.

* Clark, Willis W. Basic Skills in Wartime. Education, May, 1943

LOS ANGELES COUNTY SUPERINTENDENT OF SCHOOLS
DIVISION OF RESEARCH AND GUIDANCE



NOTE: THE LOWEST AND HIGHEST 10 PERCENTS HAVE BEEN DISCARDED.

Table I

GRADE PLACEMENT DISTRIBUTION IN READING OF ELEVENTH-GRADE PUPILS IN FIFTY-ONE HIGH SCHOOLS

Grade Placement	Reading Vocabulary		Reading Comprehension	
	No.	%	No.	%
16+	63	0.6	13	0.1
15.0 - 15.9	433	3.7	403	3.5
14.0 - 14.9	1,431	12.3	1,468	12.6
13.0 - 13.9	2,346	20.2	1,804	15.5
12.0 - 12.9	1,972	17.0	2,567	22.1
11.0 - 11.9	1,380	11.9	1,762	15.2
10.0 - 10.9	1,248	10.7	1,342	11.6
9.0 - 9.9	963	8.3	927	8.0
8.0 - 8.9	746	6.4	862	7.4
7.0 - 7.9	543	4.7	363	3.1
6.0 - 6.9	342	2.9	79	0.7
- 5.9	145	1.3	18	0.2
Total	11,612	100.0	11,608	100.0

Percentiles (in Grade Placements)		
90	14.5	14.5
75	13.6	13.4
50	12.2	12.2
25	10.1	10.5
10	8.2	8.8
Q	1.7	1.5

Test used: Progressive Achievement Tests: Advanced Battery.

Table II

ZERO ORDER CORRELATIONS BETWEEN READING VOCABULARY AND READING COMPREHENSION SUB*TESTS AND ALL SUB-TESTS OF THE PROGRESSIVE ACHIEVEMENT TESTS - ADVANCED BATTERY FOR 1,172 ELEVENTH GRADE PUPILS

	Reading Vocabulary				Reading Comprehension		
TESTS	Math.	Sci.	Soc.Sc.	Gen.	Fol.D.	Ref.Sk.	Inter.
Reading Vocabulary							
1. Mathematics							
2. Science	.729						
3. Social Science	.743	.700					
4. General	.703	.694	.741				
Reading Comprehension							
5. Following Directions	.589	.531	.548	.520			
6. Reference Skills	.600	.552	.602	.521	.506		
7. Interpretations	.676	.672	.694	.643	.573	.585	
Mathematics Reasoning							
8. Number Concept	.573	.511	.484	.426	.561	.445	.523
9. Symbols and Rules	.659	.554	.529	.484	.619	.473	.542
10.Numbers and Equations	.548	.445	.435	.381	.559	.386	.450
11.Problems	.591	.512	.512	.451	.620	.444	.517
Mathematics Fundamentals							
12. Addition	.494	.417	.416	.367	.527	.372	.436
13. Subtraction	.440	.356	.336	.301	.469	.324	.394
14. Multiplication	.424	.319	.326	.300	.448	.305	.326
15. Division	.411	.300	.303	.290	.462	.280	.316
Language							
16. Capitalization	.309	.235	.305	.299	.312	.238	.279
17. Punctuation	.358	.289	.337	.342	.392	.301	.288
18. Words and Sentences	.346	.280	.326	.329	.304	.246	.308
19. Grammar	.518	.404	.453	.445	.470	.346	.398
20. Spelling	.500	.408	.482	.526	.395	.338	.379
21. Handwriting	.194	.114	.149	.209	.209	.133	.114
Mean Score	14.48	12.01	14.11	11.13	5.32	9.87	18.55
Sigma	4.54	4.27	4.46	4.64	2.21	2.49	4.86

Table III

BETA REGRESSION EQUATIONS, WITH NEGATIVE AND INSIGNIFICANT POSITIVE WEIGHTS ELIMINATED

	Reading Vocabulary				Reading Comprehension		
TESTS	Math.	Sci.	Soc.Sc.	Gen.	Fol.D.	Ref.Sk.	Inter.
Reading Vocabulary							
1. Mathematics		.260	.229	.145	--	.171	.086
2. Science	.206		.122	.220	.025	.067	.189
3. Social Science	.208	.142		.324	.042	.204	.218
4. General	.138	.227	.285		.078	--	.117
Reading Comprehension							
5. Following Directions	--	--	--	--		.115	.111
6. Reference Skills	.093	.048	.123	--	.106		.135
7. Interpretations	.074	.172	.180	.109	.151	.186	
Mathematics Reasoning							
8. Number Concept	--	.055	--	--	.029	.037	.076
9. Symbols and Rules	.169	.041	--	--	.087	--	--
10. Numbers and Equations	.055	--	--	--	.120	--	--
11. Problems	.040	--	--	--	.210	--	--
Mathematics Fundamentals							
12. Addition	--	--	--	--	--	--	--
13. Subtraction	--	--	--	--	--	--	.040
14. Multiplication	--	--	--	--	--	--	--
15. Division	--	--	--	--	.046	--	--
Language							
16. Capitalization	--	--	--	--	--	--	--
17. Punctuation	--	--	--	--	.062	.039	--
18. Words and Sentences	--	--	--	--	--	--	--
19. Grammar	.031	--	--	--	--	--	--
20. Spelling	.070	--	.060	.166	--	--	--
21. Handwriting	--	--	--	--	.055	--	--
R^2	.724	.639	.695	.652	.541	.476	.610
R	.851	.800	.833	.808	.736	.690	.781
St. Error of Est.	2.39	2.57	2.46	2.74	1.50	1.80	3.03

Relationships among the Basic Reading Skills

The writer recently endeavored to determine the relationship between some of the specific skills of the reading process and other factors in the "basic skills" for eleventh-grade pupils.[1] The zero order correlations are shown in Table II and the multiple regressing equations for predicting each of seven reading items by use of beta coefficients from the other twenty tests are presented in Table III. When the net relationships are thus established it is seen that none of the areas are entirely discreet or independent. In fact, measurement in common between reading sub-tests and other sub-tests show considerable common underlying factors. In other words, there are both unique characteristics and elements in common with other sub-tests present in each of the sub-test areas, with net relationships as shown as beta coefficients in Table III.

Factors Resulting in Reading Difficulties

Appendix A of this report is entitled "An Analysis of Factors Resulting in Reading Difficulties." It was prepared by the writer several years ago and has been found to be useful in clarifying some of the many aspects or relationships in the appraisal of reading difficulties of pupils.

Concluding Statement

It has been stated or implied in this report that there are extensive variations among pupils in both background and ability, and, for this reason, teachers must keep constantly in mind that:

Learning is an individual matter. Therefore, the maturity, the background of experience, and the extent of competency of each pupil must be given consideration by the teacher in applying the reading curriculum

The grade assignment of pupils is not a satisfactory or valid criterion either of pupil accomplishment or reasonable expectancy of individuals. It is often falsely assumed to provide a criterion of ability and competency.

The direction of the learning situations to be experienced by pupils should be guided by a knowledge of the pupils' background and experiences, their maturity levels, and their strengths and weaknesses in reading skills.

1. Clark, Willis W. A Study of Factors Related to Mastery of Skills in Reading, Arithmetic, and Written Expression in Los Angeles County Senior High Schools. Unpublished Doctor's Dissertation, The University of Southern California, Los Angeles, California, 1941.

Appendix A

An Analysis of Factors Resulting in Reading Difficulties

Factors	Symptoms	Causes	Treatment
PHYSICAL			
Defective vision	Squinting, holding books close to eyes. Lack of persistence in study. Headaches.	Inferior vision. Eye strain. Poor lighting in room. Glare. Bad seating arrangement. Small type.	Glasses. Large type. Better lighting and seating arrangement.
Defective hearing	Inattention. Indifference. Confuses letters and sounds. Does not understand or follow directions.	Inferior hearing. Too much noise in room or playground. Teacher talks too low.	Examination of hearing. Change seat. Quieter room and grounds.
Poor General health	Nervous. Weak. Tired or lazy. Poor posture. Irritable. Pallid. Complains. Lack of attention.	Under-nourishment. Improper diet. Irritation due to disease or defect. Disturbance of growth or function.	Adequate diet and nutrition. Proper treatment in consideration of defects, diseases or functional disturbance.
MENTAL			
Mental immaturity	Inability to learn work of the grade. Inability to follow directions. Slow in getting assignments. Misbehavior.	Individual differences due to inheritance. Improper placement in grade. Teaching grades instead of pupils. Defense reactions. Desire for recognition. Slow muscular reactions.	Proper grading and classifying. Adjusting assignments to pupil's ability and developmental needs.
Emotional difficulties	Temperamental. Bashful. Shows extreme fear, anger, embarrassment, timidity, stubbornness. Has tantrums. Brags. Feeling of superiority. Cries. Is pugnacious. Lacks ordinary poise. Inability to get along with other children.	Poor home conditions. Unfortunate experiences either at school or home. May have physical cause. May be improperly placed. Sensory aphasia. Word-blindness. Word-deafness.	Conference with parents. Change environment. Change disciplinary methods. Promote friendly relations with child. Strive to secure child's cooperation. Seek to encourage rather than discourage. Seek to discover and remove cause of the disturbance.

Factors	Symptoms	Causes	Treatment
Speech defect	(Usually emotional factors involved. See also poor oral reading.)		
SOCIAL			
Meager vocabulary because of Foreign Language in home.	Hesitation in reading, accent, slwo vocalization. Parrotlike learning. Poor interpretation	Foreign parents. Broken homes. Illiterate home. Working mother. Work not meaningful because of faulty apperception.	Build up fund of experiences. Special help on vocabulary. Stress oral English. Careful development of meaning of lesson. Much simple reading. Concrete illustrations. Much activity-habit of associating known to unknown.
Meager literary background in home	No interest in stories. Inability to follow directions. Lack of comprehension. Poor vocabulary. Mispronunciation.		
Meager common experiences.			
INSTRUCTIONAL			
Poor oral reading.	Poor rate of vocalization, halts, confused, word reader, omissions. Substitutions. Guessing. Mispronunciation. Omits endings. Repetitions. Careless with little words. Lack of comprehension. Poor expression. Poor phrasing. Asks help on common words. No interest in reading but likes to be read to. Inability to attach new or unfamiliar words. Transpositions. Poor tonal quality. Nasal. Mumble. Monotonous. Too rapid reading. Insertions. Too many fixations of eye per line. Too short fixations.	Meager vocabulary. Lack of phonetic power. Short span of perception. Read too much from context. Poor attention. Short eye-voice span. Apperceptive power not trained. Poor enunciation. Lack of comprehension. Failure to appreciate language relations. Poor selected material. Breath control poor. Improper phonetic power. No attention paid to content. Inattention. Return sweep of eye not true. No rhythm in eye-movements. Too great knowledge of mechanics of reading. Bad habits of early grades. Poor attitude toward subject.	Increase vocabulary. Improve reaction time. Enough word analysis to give pupil independenco.Supply much material suitable for ability of pupil. Train to increase span of perception. Use short exposure exercises. Give attention to type in readers. Analysis of types of imagery. Train to increase speed by timed exercises.Enunciation drills. Increase ability to recognize word by con text. Exercises to make voice pleasing, to control breathing and avoid fatigue. Have reading done at high level of attention. Have reading fit into experiences of child. Group children for instruction according to type of error. Encourage chil to keep graphic chart of his progress.Provide audience situations.

Factors	Symptoms	Causes	Treatment
INSTRUCTIONAL			
Poor silent reading	Inability to follow written directions. Look at pictures in book only. Inadequate reports in social studies. Unable to use index or look up references. Slow in covering assignments. No interest in reading for pleasure. Moves lips when reading silently. Too many fixations per line.	Inadequate vocabulary. Over-emphasis on vocabulary study, phonetics, and other analytical drill. Language forms not automatic. Read word by word. Over emphasis on reading too large units in beginning (fakes) over difficult material. Inability to interpret meaning. Unfamiliarity with subject. Inability to organize, to get meaning from paragraph, from sentence, from phrase. Over emphasis on oral reading. Too great vocalization. Lack of encouragement in use of context to recognize unfamiar words. Lack of training at certain critical learning periods. Always read to, does not have to exert self. Too narrow span of perception.	Diagnose and remove vocabulary difficulties by specific teaching. Use standard word lists and tests to check practice. Train to recognize word by context. Develop speed by special exercises. Decrease vocalization by direct appeal and use of timed devices. Develop motives for reading. Give special treatment to each content subject. Use work books. Teach how to study. Make careful assignments. Teach summarizing. Train to pick out main idea. Train organization and retention of ideas. Teach how to read for a purpose. Make practice material similar to test which revealed child's weakness. Make child aware of his reading habits. Show value of rapid silent reading. Use enough easy material to increase confidence and assure practice. Train in interpretation of paragraph units. Use material suitable in difficulty and of real thought units. Require comprehension constantly. Use intrinsic devices. Teach different types of reading (narrative, descriptive,

Factors	Symptoms	Causes	Treatment
			poetry). Teach appreciation. Give child individual help on his difficulty.
Inadequate reading	Meager knowledge of facts, information	Lack of interesting and suitable materials. Low intelligence. Content too difficult.	Variety of reading materials suited to interests, needs, and mental maturity.
Unsatisfactory Appreciations	Lack of interest in masterpieces of literature. Dislike of poetry. Preference for popular fiction, thrillers and questionable publications. Obscene drawings and writings.	Too much analysis of mechanics of writing. Lack of choice or variety. Reading vocabulary too difficult for enjoyment. Undesirable home and social influence. Lack of adequate satisfactory information about life and wholesome living.	Assign literature at enjoyment rather than study level. Allow wide choice in field of literature. Read for pleasure rather than analysis. More literature with simple vocabulary. Adequate sex instruction. Development of attitudes and ideals favorable to the realization of the objectives of education.

THE INFLUENCE OF PHYSICAL FACTORS UPON BEHAVIOR

Herman W. Covey, M. D., C. M., Medical Director and Psychiatrist, Juvenile Hall Clinic, Los Angeles

Almost from the beginning of modern psychiatry, there has existed a controversy between the advocates of the organic and the psychogenic origin of mental states. At first these were regarded as alternative theories. It was a case of either....or. According to the organicist, the brain was the organ of mind and there must be some abnormality of the brain to account for each mental disease or psychosis. This was a theorem well known in general medicine. In penumonia one always found the characteristic areas of consolidation in the lungs; in typhoid fever the ulceration of the lymphatic tissue of the intestines. In some forms of mental disease typical lesions in the brain were actually found. General paralysis, senile psychosis, and some others could be identified by the appearance of the brain at autopsy. However, the great majority of mental diseases were accompanied by no demonstrable changes in the brain. Kraepelin, the last and greatest of this school, made his most noted contribution to psychiatry in his description and classification of forms of mental illness. These have not yet been surpassed. In the early years of the century, the psychogenic school, led by Freud, Jung, Adler, and others, arose to explain mental disease and neuroses on a purely psychological basis. In some instances physical factors were completely ignored. Here again some cases , notably the various manifestations of hysteria, were adequately explained, as shown by demonstrated cures obtained through treatment based upon their theories. Regardless of what we may think of these different schools of thought and practice, there can be no question of the value of the contributions these men have made to the development of modern psychiatry. Each has added his share to our knowledge of how the mind works in health and disease, which is psychiatry.

As so often happens when the pendulum swings so sharply from one extreme to the other, it has come to rest somewhere in the middle ground. We hear much these days of psychosomatic medicine, the psychobiology of Adolf Meyer. Psychiatry itself is defined as the study of the human being as a unit. Physical and mental represent an artificial division, being merely different phases of the same thing. Neither the body nor the mind can function without the other. And no human being can function normally unless all componenent parts of the body are normal. Body and mind are inter-dependent -- both are involved in every human action or thought. Mental diseases have both physical and psychogenic elements in their causation.

This brief historical sketch of classical psychiatry may seem to have little connection with my subject. However, the newer brand of psychiatry concerned with behavior rather than with mental illness, the so-called orthopsychiatry, has, in its development, followed exactly the same course as I have related. John B. Watson, with his behaviorism, may be taken as a representative of the organic or machanistic school. As you know, Watson had a physical explanation for everything the human animal did. Even silent reading, thinking, composing music or literature became relatively simple mechanical processes. The reaction to this point of view came in the child guidance and behavior clinics, where childhood maladjustment and delinquency were related to emotional or psychological causes. Here, too, in many cases, physical factors were ignored. I was told by the director of one of the leading child guidance clinics that he often made no physical examination

at all of problem children studied in his clinic. In this branch of psychiatry the pendulum has not yet swung back from the extreme psychologic point of view. There are, however, signs of a beginning change in an increasing emphasis being placed upon physical factors in behavior.

There is a very extensive literature on the prevailing mental hygiene or guidance approach which is no doubt familiar to all of you, as this viewpoint has been extremely popular of recent years. Handbooks for parents, do's and don't 's for parents and teachers are being published in great variety. There is no question of the wisdom and value of most of the advice being distributed from every psychological and child guidance center. Yet one cannot help having a feeling, perhaps not always expressed, that the results of such treatment are not all that one would wish. In my own clinic such unhappy results are far too common. Again and again we have children with what seem to be minor behavior problems given the benefit of the best joint efforts of our group, only to return to us with more serious problems and after committing graver offenses. Finally society can no longer tolerate them in the community. I have no exact figures, but the statistics of the Gluecks in their Massachusetts cases are sufficiently depressing no matter how much one may discount them. We have various reassuring ways of accounting for our many failures. Maybe, as in the Gluecks' cases, treatment was not carried out by the clinic; or the social resources of the community are inadequate. Whatever explanation we may offer for our failures, the fact remains that they are far too frequent for our peace of mind. Nor can we say that present disturbed world conditions are responsible, for this trend was apparent long before the war.

I would like to offer the suggestion that many of these failures are to be explained by our having over-looked certain physical factors that are present in many cases of so-called delinquency. I think too that this will explain some things that have long been puzzling to teachers, -- how it seems impossible to reach certain children by any method of approach, the seeming lack of reason in the anti-social behavior of certain children.

There are several ways in which somatic disorders affect behavior. Many are so obvious that they need only be mentioned -- brain tumour, meningitis, hydrocephalus, severe head injuries, congenital anomalies of the brain. These conditions are usually associated with feeble-mindedness, paralysis, and often epilepsy. These people might be looked upon as instances of a person trying to function with a part of his brain missing. Again there are some disease conditions which are not associated with brain pathology that produce feeble-mindedness or other mental symptoms. Among these might be mentioned cretinism and other endocrine or glandular disorders.

Another group of cases where bodily disease produces mental symptoms comprises acute infections, intoxications, and nutritional disturbances. Here the psychiatric symptoms are of a temporary nature, appearing mostly in the form of deliriums and mental confusion. These are not associated with structural changes in the brain and usually clear up when the disease producing them is cured. These, like the first group of cases mentioned, are instances of serious illness, apparent to anyone and are of interest chiefly to physicians.

There is, however, a third class of cases where the physical illness is

not so obvious and is, in fact, in some danger of being overlooked. Children of this class make up our serious problems and are often looked upon as being inherently bad or are summarily disposed of by being labeled neurotic, psychopathic, or described by other meaningless terms. Before discussing some of these types in greater detail, it might be well to mention some of the differences that are found in the effects of physical disorders upon children and adults. The effect is more complex and more severe in the case of a child for several reasons. It must be remembered that the child's brain is undergoing active growth and development of form and function. This process of unfolding is interfered with or even entirely suspended during the course of an illness and, even after recovery from the disease, does not altogether resume its normal course. I might illustrate this by the case of the cretin. Every one knows that with loss of the thyroid gland, through disease or operation, an otherwise normal human being becomes an idiot. If, however, the gland secretion that is missing is administered regularly in sufficient amount, the person becomes his normal self again. Now babies are sometimes born without a thyroid and, if untreated, they never develop mentally beyond infancy If the condition is diagnosed at birth and treatment begun at once, this potential idiot at once becomes a normal baby. If, however, treatment should be delayed even for a few years, the child improves, but not to the extent of becoming quite normal. Some of the natural mental growth that should have taken place during those lost years never does occur. The same is true in other physical defects, especially in connection with the organs of special senses, of which more later.

The child's brain is less well protected against disease than that of the adult. This is shown by the greater frequency of convulsions, delirium, chorea, and other serious mental symptoms in the course of febrile diseases in children. It is quite true that most children pass through the diseases of childhood without serious after effect and without the occurrence of any psychiatric symptom. In other children, investigation of their behavior problems shows a definite relation between their difficulties and some illness or physical defect. Crippled children often become self-conscious and sensitive, even unnaturally seclusive. Over-solicitous or emotionally unstable parents often cause physical illness or discomfort to become fixed i as in the child's mind until he will seize upon this as a valuable weapon in gaining his ends. Attacks of asthma, vomiting, headache, enuresis are very commonly found to be associated with the child's attempt to escape an unwelcome situation. It is astonishing how often the chronic bodily complaints of children are patterned after the real illnesses of their parents or other adults in the family. Another cause for neurotic reactions in children is the result of ill-considered statements by physicians. It is a common occurrence for a boy, who has been told that he has a leakage of the heart, to develop a phobia which comes to affect every action of his life. It is always a serious matter to give a grave prognosis in the hearing of a child, for it is often very difficult to undo the harm that has been done by one thoughtless word.

It cannot be said too often that it is not the disease or defect from which the child suffers that affects his personality. It is only if other destructive factors exist concurrently that any serious harm results. For example, a child can carry on quite satisfactorily with greatly impaired vision or hearing or even with a chronic heart or kidney disease, tuberculosis,

et cetera. Many such cases are in the experience of all of us. When the circumstances of a particular case cause this physical handicap to become a threat to the child's security or prevent him, by the resulting restricted activity, from gaining acceptance by his group -- it is then that a psychiatric problem is created. This affords us a double opportunity for successful treatment. If the physical disorder is one that is incurable, as rheumatic heart disease, we can still bring about a satisfactory adjustment by attacking the other factors in the case. Almost any physical handicap can be borne if proper adaptation is brought about. It is, first of all, necessary that the handicap be recognized; -- then means of compensation can be found and the child brought to accept his defect as one more of the hard blows he must expect from life.

Child psychiatrists are coming to find that a large number of cases of maladjusted children, which were formerly supposed to be due to improper training or bad environment, actually have a physical basis. These cases of unrecognized disease explain our failure to "cure" these problem children by environmental changes, various placements in boarding homes or schools. The commonest of these unrecognized physical disorders are early epilepsy, chronic encephalitis, hearing defects, and brain damage from previous disease or injury. Newer methods of examination have led to the recognition of these cases which we formerly missed. The most important of these methods is electro-encephalography or brain wave tracings. The brain in its activity gives off constant electrical impulses which can be recorded in the form of a tracing somewhat similar to a pulse tracing. The form of the constituent waves varies in different conditions of brain activity as well as in disease and injury. Certain types of waves are characteristic of different conditions. The first of these to be recognized was that accompanying epilepsy which is now quite well known. These characteristic epileptic brain waves are present before the onset of fits; hence by this means we are able to diagnose epilepsy in the very earliest stages. Another more recently recognized type of brain wave is that which we call psychomotor and is believed to be due to minor injuries of the brain not serious enough to be recognized by the usual neurological examination methods. These minor head injuries do not cause paralysis nor convulsive attacks, but do produce changes in personality and various behavior changes.

Case 1

Donald, 15, admitted to Juvenile Hall for running away from the California Junior Republic. He was a foundling and little was known of his early life. The first information we have was that at the age of seven years he was placed in Detention Home at St. Joseph, Missouri, by his adoptive parents because "he was a bad boy and a thief." The teacher in the school, where he attended first grade, reported that he stole little things in school. The landlady reported the mother was cruel to the child, made him kneel for hours praying, and immersed his face in water as punishment. Parents removed him from the Detention Home a week later. He next appeared in the Probation Department in Los Angeles, a few months later where parents took him for advice. They then told that he first became troublesome at the age of six years. He stole everything he could lay his hands on, took groceries from neighboring apartments and scattered them in the yard; cut up three of his mother's good dresses; tied a rope around a dog's neck and threw it over

the fence, holding it there till the dog died; choked another dog; threatened his mother with a butcher knife; set fires in the kitchen on several occasions. He was placed in a boarding home and remained there about five years. Throughout this period he stole frequently; would go into mad rages if things did not go to please him. He behaved well when foster-parents were present, but when away from them was disobedient, would leave the house, and on one occasion ran away for several days. He was next placed in Pacific Lodge for two years. There he did fairly well but ran away once, continued to display his mad rages, and on seven different occasions broke windows. He was next placed in California Junior Republic but complained of the boys' teasing him, that he was treated unfairly by one of the teachers and ran away after four months. On coming to us, he was found to be normal physically except for a rupture. Psychological tests showed him of normal intelligence, with an I.Q. of 85. He was with us twenty days, and during most of that time he was well-behaved, a willing worker, and interested in the institutional activities. On two occasions, however, he showed severe temper tantrums, once because he was given a conduct rating below what he though he should have; the other time occurred while he was in Court and there he savagely attacked one of the counselors who tried to quiet him.

We diagnosed this boy's condition as epilepsy although as far as known he had never had an actual fit and the foster parents were surprised that such a condition was considered. If this boy had been carefully studied during early life, all this anti-social behavior could have been avoided as well as the two adoptions and the fruitless attempts at treatment. We have found this condition repeatedly in children who have been serious behavior problems, but usually dismissed as "ornery" or mean. I might say that this boy was transferred to the General Hospital for commitment to an institution for treatment. After a few weeks' observation there, he confirmed our diagnosis by having a severe convulsion.

Case 2

Robert, nine-year old negro, born out of wedlock. He began running away from home at the age of three years and became a serious runaway problem when he started school at five years. He stole sums of money from his mother repeatedly. On one occasion he poured hot water over the sleeping baby but insisted this was an accident. Over a long period of time, mother has asked help of the school authorities in the child's difficulties. He came to school late, sometimes did not come at all, and failed to return home after school. In school he was untruthful, restless, "nervous," a poor sport, and insisted on playing with older boys. He was boisterous and a braggart; the only boy whipped in that school over a long period -- but this had no effect upon his behavior. His classmates accused him of setting a fire in an alley near the school. Discipline and punishment in the home was of no avail and in despair the mother appealed to the Juvenile Court for help. Physical examination at Juvenile Hall showed nothing abnormal. Stanford-Binet test showed normal intelligence, an I.Q. of 103. Electro-encephalogram, however, showed a four plus abnormality of brain waves with many of psychomotor type. Appropriate treatment was begun and after three months at home, there has been no recurrence of the problems. He still needs much habit training but his mother is at least able to control him, which has not been the case in the last four years.

Case 3

Esther, 10½ year old negro girl, was brought to Juvenile Hall because of stealing from neighbors. Little is known of her early life. At six years she was in a Catholic school were the nurses observed sex play, pilfering, making obscene drawings on blackboard and in books. A study was made at Queen of Angels Hospital. She ran away from home, was untruthful, stole money from the home and neighbors, taught sex practices to her younger siblings. Mother calls her "a little fiend." She was punished severely by her first step-father with no improvement. She has been in the home of father, mother, and other relatives. Studied by the Child Guidance Clinic in 1941, and on their advice placed in a boarding home, which would not, however, keep her long. In public school she did excellent scholastic work but was a serious behavior problem. School authorities called her "that terrible child," and excluded her frequently for long periods. She stole a ring from teacher's desk. Children complained to their parents that Esther pulled up her dress and exposed herself, told vulgar stories, made sexual advances to boys. She told fantastic stories - said she had had sexual relations with ten boys in succession. She was at times cruel to other children and again would try to gain favor with them by distributing candy and small articles she had stolen. Her stealing has continued throughout the years, becoming progressively more serious. Neighborhood children are forbidden to play with her and none of the relatives will have her in their home, and no boarding home can be found that will take her. At Juvenile Hall she was found in good physical condition, had some poor motor control but no other positive neurological signs. Psychological tests showed normal intelligence, I.Q. 109. Electro-encephalogram showed psychomotor waves with a four minus rating, indicating organic brain damage although there was no history of injury nor serious illness. She was placed on treatment and there was an almost immediate change in her behavior. All the attendants noticed this. She grew quieter and more mature, responded better to suggestion. She volunteered that she felt better and did not have to steal as much as she did before. This improvement is still quite recent and has not been put to the practical test of living in the community. However, it offers some hope as it is the first improvement that has ever resulted from all the treatment efforts that have been tried.

* * *

The routine use of the pure tone audiometer has resulted in the detection of many cases of hearing loss which before had been overlooked. This is well shown in the statistics of Juvenile Hall Clinic. In 1937-38, before this service was available, hearing loss was the tenth most frequent physical defect among the children studied, being found in .25%. In 1941-42 it was first in order of frequency and was present in 8.17% of our cases. Unrecognized defect of hearing causes behavior disorders in several different ways. You will hear much more of this during these few days so I will merely remind you of some ways in which this comes about. Loss of interest in school from inability to hear what is being said. Early fatigue from strain on the child's power of concentration due to his effort to hear clearly - similar to eyestrain. A sense of inferiority from his being "different" from his fellows. The impatience with which he is often treated by adults because of his slowness of response. This often reaches the point of his being considered stupid or even feebleminded, especially when he also shows a vacant expression and perhaps a speech defect.

Case 4

Stanley, 9 years of age, was admitted to Juvenile Hall in September, 1938, charged with seven counts of burglary. He was born and had always lived in the same suburban town, where even at that age he had a poor reputation at school and in the neighborhood. His home was materially decent and his parents well-meaning but rather ineffectual people who both whipped him a good deal. He was associated with a group of boys of his own age or slightly older with whom he broke into houses, stores, and churches. He himself said "I began stealing penny things when I was six." He was studied at the Child Guidance Clinic who found his physical condition good but with some impairment to vision of right eye and some impairment to hearing of right ear. He was of borderline intelligence. Placement at Strickland Home for Boys was recommended. During the next four years of his life, his history was of ever-increasing unadjustment. He stayed only six months at Strickland Home and made a very poor adjustment. He was much too worldly-wise for his age; it was difficult to hold his interest in school; and he ran away so often that the institution refused to keep him. He was returned to his own home but soon became involved in extensive stealing -- a gold watch, a bicycle, and other articles. In January, 1940, he was in Juvenile Hall for the third time. On this occasion he was given an audiometric examination and found to have a very severe hearing loss in both ears. His intelligence rating was found to be borderline -- I.Q 78. Because of the seriousness of his offences he was committed to Whittier State School. He remained there one and a half years during which period he ran away ten times. In addition, he frequently caused disturbance in school. There were constant reports by his supervisors of his being extremely nervous, unable to be quiet or cooperate in the orderly conduct of his cottage group; he found more ways to make a noise than all the other boys put together. When Whittier could no longer put up with his disruption of the group, he was transferred to Sonoma State Home as a "defective delinquent." The last time we saw him at Juvenile Hall was on October 1, 1942, when he came to us for a review of his case. He still showed little concern for all the stealing he had done, treating it as excusable mischief. He could see no harm in running away. His judgment was inferior; he had no understanding of the necessity of conforming to conventional standards of social conduct. Psychological retest showed an I.Q. of 83. His hearing defect was considerably improved though still well marked in all frequencies.

This case is one of our tragic failures. His problem in the beginning was due to failure to recognize the seriousness of defective hearing, for this was undoubtedly the beginning of his problem. By wiser management in the early stages, these years of wasted effort could have been avoided.

* * *

Encephalitis or sleeping sickness is a very protean disease. Severe cases are readily recognized as the symptoms are very striking. Often, however, the acute stage of the disease is so mild that neither the patient nor his family can distinguish it from an ordinary cold or attack of influenza. In either case, however, the sequelae or after-effects may be equally serious. These may be physical -- tremor, muscular rigidity, disturbances of sleep -- or emotional, causing changes in personality, behavior disorders, or any combination of the two. Whenever we find a child whose behavior from a certain period of his life shows a complete change, we have learned to look for signs of this disease. Frequently the parents will tell us that this change in

personality is the result of certain bad companions or a change of environment, as from an eastern state to California, or from the country to the city. Such easy explanations are seldom adequate when a heretofore well-behaved boy changes overnight to become a youthful criminal.

Case 5

Gloria, 17, an adopted child of whose early life we have very little knowledge. She was placed in a foster home at five years and adoption was completed two years later. She has attended Adventist church schools most of her life. In April, 1940, she left home, leaving a note saying she was going to Denver, Colorado, to visit her real mother. She was picked up two days later in San Fernando, and had spent one night with a strange man who had given her a ride. She said she did not know why she had run away except that she did not want to return to the school she had been attending. During the summer vacation she again ran away. In the summer of 1941, she went East with her mother's divorced husband, and after returning to California a few weeks later, she ran away from home and from boarding school several times; usually when caught she was with a sailor or other strange man. In January, 1942, while being held in the Vallejo detention home, she swallowed an open safety pin and an emergency operation was necessary to remove it. This was her third attempt at suicide. As a last resort, all other methods having failed to bring about an adjustment, she was committed to Ventura State School in October, 1942. She was admitted to Juvenile Hall January 15, 1943, as a runaway from the State School, and the same evening swallowed an open safety pin, which lodged in her throat and was removed at the General Hospital. Her physical condition was found good on routine examination. Psychological test showed very superior intelligence, I.Q. 136. Psychiatric examination revealed signs of chronic encephalitis, and treatment for this condition was started. From the first she showed a startling improvement. On February 6th she was allowed to do filing and typing in the psychiatrist's office, and from then on improvement was steady and sustained. On March 13th her parole from Ventura was arranged; she was allowed to live with a married sister in Los Angeles, and a part time job as stenographer was found for her. Shortly thereafter she secured, through her own efforts, full time work in a lawyer's office, as her ambition is to study law.

* * *

This recognition of hitherto undetected physical causes of maladjustment and delinquency in children is, in my opinion, one of the most important advances in child guidance that has been made in recent times. It not only explains the failure of psychiatric treatment in many, many cases, but likewise helps us to avoid years of useless effort along directions in which we are bound to fail. I have said nothing about the treatment of these physical conditions, but I would like to impress upon you that this is a matter for the physician. I do not mean to imply that psycho-therapy is valueless. On the other hand, it is an essential part of the treatment of any case. As I said in the beginning, psychic causes are present in every case and no aspect of the child must be neglected. There is a share in treatment for the teacher and the parent, as well as for the psychologist, the social worker, and the psychiatrist, and each must do his part if success is to result.

ROUTINE VERSUS SPECIAL INSTRUCTION

Mrs. Minnie Hawes Davies, Hearing Conservation Teacher, McKinley Junior High School, Pasadena

The child with a hearing loss presents a serious problem to himself, his parents, his friends, and his teachers to such an extent that his plight requires keen insight and understanding on the part of all who deal with him. I shall attempt to describe how his problem affects his school life and how many teachers are cooperating to effect a satisfactory solution.

Since there are farious types and gradations of deafness, I shall concentrate upon those border line cases which are so illusive of detection and which authorities are now beginning to recognize as possibly the most neglected or even the most tragic. The severely deaf or hard of hearing individual can readily be recognized by the most casual observer, and allowances are made for his mistakes. But the child with dull hearing is probably considered stupid or obstinate, and an ordinary diagnosis of his case results in baffling conclusions. The real reason for his retarded progress and his unsatisfactory behavior can be detected only by the mental alertness and understanding of his teachers. Such a case presents a most interesting challenge to any teacher.

I wish first to discuss this type of child as found in a regular class room of thirty or forty children under the supervision of one teacher working feverishly to meet all the demands made upon her time and strength. What chance has the hard of hearing child to receive the individual help he so sorely needs without taking more than his share of the time allotted to the whole group? Why does his teacher suspect his hearing and why does she report him to the school nurse for examination by the doctor? The following reasons have been given to me by teachers who have actually discovered these children in their classes and have effected their transfer to hearing conservation groups for special education:

1. The child shows habitual inattention and lack of interest in class activity.
2. The teacher is aggravated and irritated because he fails to understand explanations.
3. Immediately following a careful explanation the child asks foolish and needless questions as though he had spent the time in dreaming.
4. The teacher considers him to be stupid or else just a pest.
5. The child draws away from the class and spends the time doing other things.
6. He frequently says, "What?" or "Huh?" or disturbs his neighbor by asking, "What did the teacher say?"
7. The teacher notices a tilting of the head as if to put the best ear foremost, or a concentration of the eyes upon the speaker's lips.
8. Some children present disciplinary problems by interfering with the personality rights of others. They are cross, impatient, and irritable, or carry a chip on their shoulders. Frequently, they fly into a fit of anger when they don't understand what is said, and blame the speaker because he doesn't speak so that he can be heard.
9. The highly sensitive hild often feels resentful when his hearing is being questioned and replies that he hears everything, not realizing how much he is really entitled to hear or how much he is missing.
10. One boy was called to our attention because he never responded to his name in roll call or recitation.
11. Others have been found because they were poor spellers and had no

conception of the relation of sounds to spelling. They neither wrote nor said the s, ing, or ed, as these were sounds they never heard. The written language of a child is almost certain to reveal the hidden characteristics of a loss of hearing.

12. Speech defects are always noted with suspicion and lead to examination of hearing. Sh for ch is frequent. Share for chair.
13. Enlarged tonsils and adenoids frequently bring to light a child who is suffering impaired hearing.
14. Often the teacher is at a loss to know what is wrong with him but feels that he can hear well enough when he wants to. Often this is the case, and a more advantageous seat will prove beneficial. Particularly so, if the teacher will always face the child, will never talk with the child facing a window, or will never talk while writing on the blackboard. But the regular class room teacher can not fit all of her teaching to meet the requirements of perhaps only one hard of hearing child to the exclusion of her other pupils.

The usual effect upon the child is that the strain of listening becomes too great for him to bear, and being weary, he feels discouraged and decides that learning is not worth the effort. He finds that by asking too many questions he is becoming a nuisance to his teacher, and so he resigns himself to letting most of the work pass by without doing it. Thus, a bright child will acquire undesirable study habits and fritter away his precious school days. By avoiding calling attention to himself, he loses his individuality in the crowd and proceeds to draw into a shell. He will sit in a back seat if he can possibly manage to do so and will be quite happy drawing pictures or reading a book of his own choosing quite oblivious to class proceedings.

We wish there were more children of the type of a charming little girl who attracted the attention of her teacher by coming to the front of the room and snuggling under that friendly arm so that she might always hear what her teacher was saying. But hard of hearing children are not generally that way. In place of drawing closer to their teachers, they withdraw farther and farther away.

It is certainly a sign of progress that all teachers are becoming hearing conscious and that retarded children both mentally and physically are being reported to health departments for testing to ascertain if a hearing loss is a contributing factor to poor school work or delinquency.

The use of a Pure Tone Audiometer is the best method of testing, and if hearing loss is found to be present the child may be assigned to a hearing conservation teacher for lip reading, speech auricular training, and academic subjects in which he is deficient.

At this point he becomes the responsibility of his special teacher who has been trained to meet his particular needs. A home call by both the teacher recommending his transfer and his special teacher should initiate the change in program, as it is highly necessary to have the approval and confidence of the parents and to start on a cooperative basis. Perhaps the parents have not been fully aware that their child did not hear well, or knowing it, have considered it of no vital importance. Investigation usually reveals a long history of ear trouble or a need of tonsilectomy. Very often the parent has been notified by the school health department that tonsils and adenoids

are damaging the child's health and retarding his progress, but for financial or other reasons the warning has been ignored. However, when that point is reached where the child can no longer remain in a regular class, the parents are most eager to have the necessary surgical work done, as if a sudden jolt were necessary to bring about a realization of the serious condition. It was recently suggested in a joking fashion that the services of a hearing conservation class could be used very effectively as a means of inducing parents to have bad tonsils and adenoids removed regardless of their relationship to hearing.

Following the transfer the child's program is adjusted so that he may spend one or more periods each day with his special teacher in lip reading, speech, auricular training and academic subjects in which he may be failing or in need of coaching.

Upon entering the class he finds that his particular problems are at once given major consideration by his teacher and classmates. Of course, no two children have exactly the same, or all of the various adjustment problems to face. Each one is peculiar unto himself. The child with poor hearing and a cleft palate can not be treated exactly the same as one with dull hearing and good speech.

For several weeks the newest pupil will hold himself aloof from the group just as he has been accustomed to do. He would be very well satisfied to find something he liked to do and work all alone, or to bury himself in a book for hours at a time taking no responsibility for the group, contributing nothing, and participating in nothing. Perhaps he even resents associating with other hard of hearing boys and girls and he is inclined to consider himself superior to them. He does not want to be identified with a group of hard of hearing children. This is most often the case when parents have been super-sensitive about the hearing of their child, and has proved to be the most serious psychological handicap to overcome. It is usually the parent who is sensitive and not the child.

In his regular class he has been trained to speak in turn or to study quietly, as large groups can not encourage too much upsetting spontaneity. In the special class just the opposite is necessary for the personality growth of the child. He must be encouraged to do group work with this small class, to feel free to speak when he sees no one else is talking, and to feel that he has become a very important person. He must be led to converse freely and be made to feel that his ideas are welcome and worth the attention of others. Each pupil must be called upon many times each day to make personal contributions to his class in order to acquire self confidence and poise. No child must be permitted to withdraw into a shell of solitude and remain there. In other words, never let him retire within himself and withdraw from the social contacts of his classmates. He should be kept moving and mixing with others. Every hour spent in school by a hard of hearing child without personal contacts with his schoolmates is more or less of a total loss to him.

In contrast to the shy, retiring child we find one with an agressive tendency and a propensity to tease others even to the point of cruelty. After a case study we learn that he has always been that way and has always been a problem to his teachers. This mode of behavior appears to have been built

up as a defense measure against the treatment of his playmates because of his inability to hear well. His excuse is that he is only repaying what others inflict upon him. This tendency is being overcome by him as he progresses in school. He has become a superior lip reader and proves to have a fine mathematical mind. As he begins to excel in scholarship, he is gradually discarding his old sport of teasing and interfering with the rights of others.

An inferiority complex is the root of most behavior problems of our hard of hearing children, and it is the particular duty of the special teacher to help overcome this serious emotional handicap by capitalizing upon the best points of each child. They may be his clean personal appearance, his good looking new shirt, his hair cut, his writing, spelling, his kindness, disposition or a hundred other things no matter how insignificant they may seem. But once the child has the feeling of success in something, no matter what, he is on his way toward a better adjusted personality. All of his standards will begin to rise accordingly.

With the association of other boys and girls experiencing a difficulty similar to his own, this student becomes very happy and comfortable in his new environment relieved from nervous strain, and he uses every opportunity to enjoy the privileges of his own room. He still attends some of the regular classes and maintains contact with former schoolmates thus eliminating any feeling of segregation. All of his free moments are spent in the hearing conservation classroom before school, during lunch periods, periods when excused from physical education, and all other times when he is not fully occupied. His teacher acts as a contact between him and the rest of the school, and he finds within himself a sense of "belonging" which has not hitherto been within his experience.

Frequently, a child has been referred to us whose hearing loss has appeared so slight that we could not be sure whether we were justified in accepting him in a hearing conservation class, and seeking a final authority, we have turned to the Auricular Foundation Clinic and Mr. and Mrs. Hargrave for advice and audiometric testing. Examination of the hearing and interpretation of the audiogram have left no doubts in our minds as to the need of special instruction. Now we can understand why the child can hear the voices of some teachers and not others, or upon hearing speech can not understand the language. Many are the controversies which arise among teachers concerning the hearing of a particular child, such as "He always misses the point," from a woman teacher with a fine high-pitched voice, or "This boy hears everything I say" from the deep voice of a man, or, "I dan't understand what is the matter with this boy. He seems to hear all I say, but never obeys me."

I wish to pay tribute at this time to Mr. and Mrs. Hargrave for the help they have given to so many of our pupils, their parents, and me in suggestions for improved education, health and more satisfactory social adjustments. They have been tireless in patience and understanding.

As the child continues to develop in social attitudes and to live more harmoniously in the school-family situation, he loses his fear and nervous - ness, and takes pride in scholastic achievement. He uses the group hearing instrument and learns to hear and say the <u>s</u>, <u>ed</u>, <u>ing</u>, and <u>ch</u> which he has been omitting. At times I feel that I am acquiring the physical characteristic of the sound <u>s</u>, as I am continually listening for it and reminding

someone that I not hearing this sound in his speech. The hearing instrument is of untold assistance in speech correction. Out of its use has come the desire on the part of the student to possess his own. Consequently, having been trained at school in the use of hearing aids, more children are buying their own and proudly wear them with no feeling of embarrassment. One boy who is now employed by Lockheed on the 4 - 4 plan used his first paycheck as a payment on his own instrument, and wears it as proudly as a new watch.

Students are entering our hearing conservation classes at an earlier age than formerly and with less reluctance. They are more familiar with their own weaknesses and are anxious to face the facts and strengthen those weaknesses. Spelling seems to give particular trouble, and I have followed a certain routine for some time in order to have something to use as a foundation for Social Science study. Certain groups of words are thoroughly learned and the sounds associated with the spelling. We drill repeatedly on the days, the months, the continents, oceans, parts of North America, circles, zones of the earth and their locations. I find that when they have mastered these words and their relation to spelling and sound, that the spelling problem is well on the way to solution. The sounds found in these words are readily recognized in others, and spelling becomes a habit. Through the lip reading lessons the children learn that the sound f may be spelled f, ph, or v. That the sound r may be spelled er, ir, ur and shun is spelled tion. The combined approach of lip reading, speech, and auricular training do correct the atrocious spelling of our hard of hearing children.

The use of the hearing instrument, I believe, is to be offered but not to be forced. When a child says that he does not want to use it, that it hurts his ears, or that he is tired of it I agree with him that it is not best to use it right then, perhaps. However, it is always ready and within his reach, and when the rest of the class adjust their instruments and I place mine on my head, he usually becomes anxious lest he miss something interesting and he slyly slips it to his ears hoping that nobody is noticing. It is quite surprising to me that those who appear to need a hearing aid least use it the most without suggestion from me. Just why, I do not understand, but these children seem to be more keenly alert to catch sounds which they apparently have been losing to a greater degree than either they or we had realized; such ordinary sounds as the rustling of paper, the sound of the clock moving every minute, the hilarity on the playground, and the airplanes soaring overhead. They enjoy hearing these sounds.

Upon entering the special class, the frequent question of the child is, "Do I have to stay here?" or "How long do I have to stay here?" The answer is, "No, you don't have to stay here longer than you want to. It all depends upon how fast you improve." And then when June arrives and it is time for school to close, the question is, "May I come back here in September or must I go back to the other class?" The answer is, "Well, if you really want to come back, we shall see what can be done about it."

MEASURING BLINDSPOTS WITH REMEDIAL READING PROBLEMS

Bertha Dow, Fontana City Schools

The result of this work of measuring blindspots with remedial reading cases is so interesting and almost unbelievable that we will begin our discussion with "Once upon a time." Once upon a time, not so very long ago, I had the privilege of hearing Dr. T. A. Brombach, of San Francisco, give lectures about his findings in regard to Remedial Reading Problems and Enlarged Blindspots. I had the opportunity of meeting him and going over his work with him, which ended in a promise that he would assist me if I carried on his work in the Fontana schools. After explaining it to my superintendent and some of the teachers, I began measuring the blindspots of a few children who were having difficulty with reading. To my amazement practically everyone had enlarged blindspots. Then the work began with breathtaking, thrilling, unbelievable results. The children were instructed to cover one eye with an eye patch for half an hour in the morning while they were reading or writing and the other eye in the afternoon the same way. The plan is to make that one eye actually work and strengthen it. Then each week the eyes were measured again and we watched the enlarged blindspots as they gradually returned to their normal size. All of my findings were sent to Dr. Brombach, from time to time, and he helped me with his suggestions, information, and encouragement.

We all have a blindspot when only one eye is used. This physiological blindspot was discovered by Marionet in France, in 1668. It was found to be located on the nasal side of the retina in each eye, and generally speaking enlargements of the blindspot have been associated with impending or actual pathology.

The fact that there may be enlargments of the physiological blindspots in both eyes, not associated with pathology but due to functional reasons, was first presented by Dr. Brombach. His conclusions were based on years of consistent investigations conducted in the children's eye department of the San Francisco Poly Clinic and among a large number of children in private practice. The result of these investigations appears to indicate that a large majority of children showing enlargements of the blindspots in both eyes had reading difficulties.

Most children who have developed these enlarged blindspot areas are under 15 years of age. If the causes of these enlarged non-visual areas are physiological in character, they usually become normal size by the time they are adults. But by this time they are non-readers and are seldom interested in reading all through life. That is why it is important to help these children while they are young and give them an opportunity to become interested in reading materials.

When the eyes of a child are not focused properly his binocular vision is abnormal. The brain develops this enlarged blindspot area so that the eyes have less work to do because the vision space is narrowed. Let me illustrate what I mean. Here is a chart devised by Dr. Brombach for marking children's blindspots. These ovals show the normal sized blindspots on a paper this size. Now if the child could see only inside this area (draw a graph) instead of all over the paper outside these two normal blindspots, you can understand how his vision space has been narrowed. This is no fairy picture

or graph, but has actually been found in some cases. This is why some children have difficulty with reading the printed word.

Dr. Brombach has devised this instrument called a "Scotomagraph" for measuring blindspots in the schoolroom. It consists of a folding black case easily opened and placed in front of a child on the school desk. The lower compartment contains the marked white charts. The upper cover has a place where the target is kept, and an adjustable chin rest which keeps the child's head at the proper distance, thereby permitting more precise recording. The Scotomagraph is so simple in construction that the element of fear which is often encountered when a child is placed before a strange and imposing instrument is avoided.

The technique is as follows: One eye is occluded. The child's open eye is placed in line with the fixation mark, the "X," at the distance indicated by the length of the target. The child is then told to look at this "X" and never to lose sight of it. While the child's attention is thus fixed upon this mark, the target, with a 2 mm. black-spot at one end, is brought into position near the "X." Upon questioning the child will decide if the fixation mark and the blackspot can be seen simultaneously. Then reminding the child not to lose sight of the "X," the target is moved outward until it is no longer seen. If the target is not visible it is evident that it falls within the area of the blindspot. Again impressing upon the child never to lose sight of the fixation mark, the teacher moves the target in various directions, up, down, in and out until it again becomes visible. These various points are marked and later connected with straight lines and thus represent the extent of the blindspot.

During my first year of investigation and research, I measured the blindspots of 61 children. Of these 55 registered enlarged blindspots; 47 cases resulted in complete recovery after the occlusion of one eye and postural correction. There were 8 children who did not register improvement. Of these 8 cases, 5 were wearing glasses, one was diagnosed as of pathological origin, and 2 moved away before the tests were completed.

The unbelievable part is the way these children improved in reading and other subjects as their enlarged blindspot areas returned to a normal size. That part of the work reads like a fairy tale, as they so improved in their work and their interest in school activities. Their faces would actually shine as they would look at me and say, "Why I can see so much better now," or "I was put in the high reading group today." The gain in reading achievement, as recorded on their reading achievement tests, which were given by the County Supervisor, was from 2 months to 2 years and 4 months in one year's time. The length of time required to reduce the blindspots to normal was from 3 days to 6 months, depending upon how regularly and systematically they occluded the eye.

During my second year of this investigation I measured the eyes of 79 children having reading difficulties. Of these, 66 registered enlarged blindspot areas; 43 gave a positive reaction after the occlusion of the eyes; 19 were incomplete because of a measles epidemic. The same year in the South Fontana schools for Mexican children, I measured the eyes of 76 children. All of these cases were not remedial reading. The teachers were interested in having other children in their room measured. Of these 76 cases, 42

registered enlarged blindspots; 38 resulted in recovery after the occlusion of the eye and correction in postural reading habits.

The gain in reading ability was not so high throughout the school system this second year, because of a change in December from the Progressive to the Stanford Achievement Test. Most of the tests, as shown in each report, were made in the afternoon between the hours of one and two-thirty. As most of the cases came directly from a reading lesson, each child was instructed to read in my presence for a period of five minutes. In some instances, when several cases had to be measured,this rule was not rigidly applied, and the reading period of some of the children before the measurements were made was varied.

The blindspots may be measured in two ways: 1. Moving the target from invisible to visible. 2. Moving the target from visible to invisible. The first method is the one usually used. I began my work by using the second method, and this may account for the peculiar shape of some of the enlargements recorded. Either method shows if a child has developed large blindspot areas and registers recovery after the occlusion of one eye.

After the elimination of these large non-receptive areas surrounding the blindspots in both eyes became more complete, the gradual improvement in reading ability was an interesting and very satisfactory reaction. Teachers in various grades very frequently reported noticeable improvements in children who previously did not respond satisfactorily in reading and other lessons. No explanation can be given at present, but the results of these surveys reveal the existence of large non-receptive areas surrounding the blindspots. These enlarged blindspots respond to occlusion of one eye and postural correction at the reading range. Improvement in reading ability is usually recorded after they have been reduced to normal.

In conducting these observations at the Fontana Schools, the utmost precautions were taken to guarantee reliable results. There is no doubt in my mind that if subsequent surveys are made in other schools similar results may be obtained.

Case Histories

The following case histories will present a definite description of the progress made by children registering large non-receptive areas surrounding the physiological blindspots after the areas were reduced to normal. No attention was paid to the I.Q. of the children under observation. Not all cases responded completely to occlusion. Probably they needed assistance in maintaining comfortable binocular stability.

Case 1. Grade 4 - Age 9

Nancy has an especially fine home environment with an opportunity for a rich and full life. In spite of her advantages she has been a slow reader. She had been taken to an eye specialist who decided that her vision was normal and that she required no further attention. I measured her blindspots and found them enlarged. Being interested, her parents were faithful in having her occlude one eye, and in one month improvement was recorded. A

noticeable change was shown in her reading ability and a measurement made the next month registered normal blindspots in each eye. The reading tests given showed a gain in reading ability of two years. Her advancement as compared to others in the classroom was very great. There was no return to enlarged blindspots.

Case 2. Grade 6 - Age 11.

Orleta was one of three students who were taken to Dr. F. L. Furg's office in Los Angeles, for an examination when the enlarged blindspots were discovered. After the occlusion of each eye until a normal blind area was discerned, she was taken for an examination and was told that no glasses were needed. By the middle of the school year she had changed from weak to strong in spelling and writing. Her writing and composition work showed a marked improvement. She now reads much faster and her comprehension is very steadily improving. She has taken a new interest in her work and both she and her teacher appreciate the help she has received. Her reading achievement tests given in December, then in May of that school year, showed a gain of one year and seven months.

Case 3. Grade 2 - Age 7

Fred began the second grade with trouble in visual perception which showed itself in a definite squint. When trying to see the work on the blackboard he developed peculiar tense facial expressions. He sat in the front seat. He showed enlarged blindspots. Later as they began to decrease, his work began to improve and he was advanced to the middle group. His spelling was almost always 100%. By the close of the school year he was above average. In the third grade, he stood at the head of the reading achievement tests. He showed a gain of one year, six months at the close of his second year and by December of his third grade he had made a gain of two years, eight months. He is above average in all of his work.

I feel confident that the Brombach Theory of enlarged blindspots in children and its direct relation to remedial reading problems has proven itself as very worthwhile and that it should be given a place in the school curriculum. Until that time this work remains "Once Upon a Time," and cannot have a completed happy ending.

THE "READING FOR INTEREST" SERIES

Lillian A. Downey, D. C. Heath & Co., San Francisco

No longer is reading considered an end in itself or a subject to be mastered by some particular method. In our modern schools, reading is a meaningful activity at all times, contributing to the child's welfare and development. Studies of reading procedures and activities show that the reading process:

1. Enables the child to obtain information which he needs to understand himself and the world about him.
2. Provides a leisure activity, broadening his interests
3. Serves as an "escape" into imagination, humorous and fanciful situations

Reading has become more of a functional skill than a formal school exercise. With Reading integrated with the whole curriculum almost every class becomes in some degree a center where reading is directed.

Therefore readi materials must be more varied and with more flexible techniques. There is no one best way to teach reading. It is therefore essential that the philosophy and research underlying a series of readers be understood.

Philosophy Underlying the Reading for Interest Series

1. All research and current practices in reading determined the foundations and scope of the Reading for Interest program from Grades One through Six.

Dr. Paul Witty, whom many of you recently heard at the National Education Association meeting in San Francisco, is the leading author of this reading series. Dr. Witty is widely followed in the reading field because of his thorough understanding of child development and of reading. He has not only summarized and interpreted recent studies pertaining to children's interests, abilities, and dis-abilities in the field of reading but he has made extensive studies himself in factors of learning and language abilities.

2. Studies of children's interests determined the selection of the well-chosen literary material. These studies are summarized briefly in Chapter II, "Reading and the Educative Process," by Witty and Kopel, published by Ginn and Company.

The content, therefore, has a real significance for children for they see in it a relationship to their own daily lives. With Interest a dominant factor in reading, the child is stimulated into learning to read.

3. A summary of fifteen courses of study of notable importance from various parts of the United States show four major themes influencing curriculum development, namely:

Protection and Conservation of Life, Property, and Natural Resources
Life Under Different Physical Conditions
Experience with Animals
Interdependence and Cooperation

The content of the Reading for Interest series indicates high degree of relationship but not dominated by social studies topics. Over-emphasis of factual reading has been criticized by many educators and the need for revival of literary value has been pointed out for some time. The charts in the manuals give curriculum themes as they tie up with the reading content.

4. The report of the National Council of Teachers of English in An English Curriculum, 1935, and other national curriculum committees, have identified five areas of literature experience which children enjoy and which are essential elements in their education:

Enjoying action and suspense
Enjoying humor
Enjoying the world of senses
Exploring the social world
Enjoying fantasy and wonder

Naturally courses of study differ and literature areas overlap, but the splendid literary content of the Reading for Interest series made high rating with these selected experiences. Reference to the charts in the manual will show how abundantly and appropriately they are supplied in the readers at each successive level.

5. Stories have been selected by extensive tryout with children but preserved in the style of the writer of juvenile literature, with the necessary adjustments for reading abilities.

The authorship, realizing that teachers should have a background of knowledge concerning modern trends and developments in the field of reading, have incorporated this in their manuals. This has been done in a simple manner utilizing charts, illustrations, and pertinent excerpts from various professional material in the field.

Educators, authors, and artists

PAUL WITTY, M. A., PH. D., -- consultant on all books. Mr. Witty's professional study was carried on in Indiana, at the University of Chicago, and at Teachers College, Columbia University. He has served as school psychologist at Scarborough-on-Hudson, New York, and as professor of education and director of the Psycho-Educational Clinic at the University of Kansas, and is at present serving in the same capacity at Northwestern University. During summer sessions he has taught at the University of Hawaii, the University of Southern California, and at Columbia University. Mr. Witty is an active member of many educational organizations, is a frequent contributor to journals and is on the editorial board of the following magazines: Educational Method, Educational Trends, Journal of Educational Psychology, Journal of Experimental Education, Journal of Exceptional Children, and Story Parade. With others, Mr. Witty has published these recent books: Mental Hygiene in Modern Education, Reading and the Educative Process, and Mental Health in Modern Education. Frequently he appears as speaker on the programs of state and national educational organizations.

KATE KELLY, B.S., M.A., -- educator on "Bigger and Bigger" and "Little Lost Dog" -- Pre-Primer I and II. Miss Kelly has been supervisor of elementary

grades from kindergarten through Grade VI. During summer sessions she has given courses at Ohio State University, University of Chicago, and the University of Vermont. She has taught English and Education to normal students in Michigan and Virginia, and is now on the staff of the State Normal School at Castleton, Vermont.

LULA WRIGHT, B.S., M.A., -- educator on "A Home for Sandy" - Primer I. Miss Wright is a teacher in the primary grades in the Lincoln School of Teachers College, Columbia University. Her experience with children in school and out has given her understanding of the values of good books to both teachers and pupils. Miss Wright has served as editor and author for Picture Scripts, and she has worked with supervisors, teachers, and administrators from all parts of the country.

ETHEL MABIE FALK, PH.B., -- educator on "Rain and Shine" - Primer II. Mrs. Falk was formerly Supervisor of Curriculum in the Public Schools of Madison, Wisconsin. She is the co-author of English in Action, Grades III to VI, and of the Guides and Practice Books that go with them. She has contributed articles to various educational magazines, including the yearbooks of the National Society for the Study of Education. Since her marriage, she continues to be actively interested in elementary education as author, speaker, and member of educational organizations.

ETTA ROSE BAILEY, B.S., M.A., -- e ucator on "Something Different" -- (Book I). Miss Bailey has been a teacher in the elementary schools of Richmond, Virginia. During summer sessions she has taught courses for teachers at Emory University in Atlanta, Georgia, and at Teachers College in New York City. In Europe she observed schools on study tours directed by the staff of the International Institute. She is now principal of the Matthew Maury School in Richmond.

RUTH BRISTOL, B.S., M.A., -- educator on "Lost and Found" (Book II). Miss Bristol has been instructor in kindergarten education at the Ethical Culture School, New York City, head of the Department of Lower Elementary Education at Detroit Teachers College, and principal of a school, as well as Supervisor of Elementary Education, in Ann Arbor, Michigan. She is active in educational organizations, a contributor to Childhood Education, and a frequent participant in conferences. She is now on the staff of State Teachers College in Milwaukee, Wisconsin.

FLORENCE BRUMBAUGH, B.S., M.A., -- educator on "Fun and Frolic" (Book III). Miss Brumbaugh has been a teacher in the primary grades in Seattle, Washington, and in Public School 177 in Manhattan. She has contributed articles to various educational magazines. Miss Brumbaugh now serves in several capacities at Hunter College, New York City, where she is a critic teacher, instructor of Methods in Reading in the Department of Education, and principal of the Hunter College Experimental School.

DOROTHY K. CADWALLADER, B.S., M.A., -- educator on "Luck and Pluck" (Book IV). Miss Cadwallader started her career as a teacher in the elementary schools of Trenton, New Jersey. During summer sessions she has been a demonstration teacher and has taught education courses at the College of William and Mary, Virginia, Cornell University, New York, and Bates College, Maine. She has been secretary-treasurer of the Association for Childhood Education. Miss

Cadwallader is principal of the Carroll Robbins School in Trenton, New Jersey.

PHYLLIS FENNER, B.A., B.S., -- educator on "Merry Hearts and Bold" (Book V). Miss Fenner is librarian in the public schools in Manhasset, New York, where she works closely with children at all ages and with teachers. She also gives courses in Story Telling and Children's Literature at St. John's University in Brooklyn, New York. Miss Fenner is a frequent contributor to professional and educational magazines and appears on many programs for children, teachers, and librarians. The recently published book, There Was a Horse, contains stories which she has collected. She serves on a committee selecting stories oor radio programs broadcast by Columbia's American School of the Air.

URSULA BRINGHURST, B.S., M.A., -- educator on "The Brave and Free" (Book VI). Mrs. Bringhurst has taught in the rural schools of Michigan, the Western State Normal School at Towson, Maryland, and the public schools of Bronxville, New York. During summer sessions she guided student observation in the laboratory school at Teachers College, Columbia University. She appears as a speaker on educational programs for various organizations. Recently she has been giving courses at New York University for both students in training and teachers in service.

DR. BERYL PARKER is editor of the series. Dr. Parker is well known among the administrators and the teachers of the entire country. The primary teachers know her because of her activities in the Association for Childhood Education. She has been a teacher and supervisor in the Elementary Demonstration Schools in St. Louis, Des Moines, Greenwich, Norfolk, and Los Angeles. She has taught courses in Teacher Training at New York University and in the summer schools at Peabody and other universities. She was at Ankara for a time as advisor to the Turkish Ministry of Education and Educational Association. She is the author of Austrian Educational Institutes and co-author of Education in the German Republic. She is at present a Director of Association for Arts in Childhood, and advisor on Radio, C.B.S., American School of the Air, and on the magazine, Story Parade. She is a graduate of the University of Chicago and Teachers College, Columbia University.

INEZ HOGAN, the author and illustrator of "Bigger and Bigger," has had a varied career as teacher, painter, and author-illustrator. For several years she has written and illustrated at least two trade books for children each year, including Mule Twins and Deer Twins. Her list includes 23 books written and illustrated by herself, as well as many books and primers written by others and illustrated by her.

LULU WRIGHT, the author of Little Lost Dog, is a teacher in the primary grades in the Lincoln School of Teachers College, Columbia University. Her previous publications include The Magic Boat and A First Grade at Work. She has served as editor and author for Picture Scripts. Her experience with children in school and out has given her understanding of the values of good books to both teachers and pupils. Miss Wright has worked with supervisors, teachers, and administrators from all parts of the country.

ROMNEY GAY, which is Phyllis Britcher's pen-name, is the author and illustrator of "A Home for Sandy." She studied to become a kindergarten teacher and this interest in children was carried into her work as an artist and

writer. She now has an established reputation as the author-illustrator of various successful trade books for children, including, among others, The Tale of Corally Crothers and The Tale of Jeremy Gray.

ARDRA SOULE WAVLE, the author of Rain and Shine, has been a graduate student specializing in courses on children's reading and working in the reading clinic at Boston University. Previously she taught in all the grades from the primary through the high school. She is now associate editor in the Elementary Department of D. C. Heath and Company, giving particular attention to style, content, and difficulty in all primary books. Previous publications include Here They Are in the series of Walt Disney Story Books.

EVA KNOX EVANS, the author of Something Different, started to write stories for the children in her school. The stories were so successful with her own pupils that publication followed, and many children have had a chance to enjoy her books, Araminta and Jerome Anthony. Recently she became Associate Education Field Supervisor for the Farm Security Administration, a position which brings her into contact with county superintendents in various parts of the country.

ROBIN PALMER, author of the four stories in Lost and Found, has been a librarian and is now free-lance writer and the editor of Wise House Letters to children. Success in writing stories, verses, and biographical sketches for various juvenile magazines has come not only as a result of her experience, but also through a natural sense of humor and style that is evident in Mickey Never Fails in the series of Walt Disney Story Books.

BARBARA NOLEN, editor of Books III through VI, has had wide experience with many aspects of children's literature as reviewer, consultant, and juvenile editor with publishing companies both here and abroad. She has given talks on the making of juvenile books and magazines to teachers, librarians, and parents. Since Story Parade magazine was established in 1935, Miss Nolen has been literary editor. During this period she has also edited the six annual volumes of Story Parade and Children of America, the new series of Story Parade Picture and Adventure Books, and New World Neighbors. In part time service for D.C. Heath and Company, she has cooperated in producing Walt Disney Story Books and Reading for Interest.

Artists

WINIFRED BROMHALL, artist for Little Lost Dog, was born in England and spent her childhood there but came here when she grew up. Soon after she arrived she illustrated her first book, A Child's Day by Walter de la Mare. Of these illustrations Anne Carroll Moore says, "Winifred Bromhall's pictures for A Child's Day are very childlike and true and are introducing hundreds of children and their parents to the poetry of Walter de la Mare." Another charming book of hers is The Pig That Danced a Jig. Miss Bromhall's feeling for design and delight in detail give some of her illustrations the charming qualities of miniatures.

PELAGIE DOANE, illustrator of Something Different, has illustrated books for babies and for the teen-age, stories of everyday as well as fairy tales and hymns. To each she brings a sympathetic interpretation, for she has that rare ability of associating herself with an author's material and giving it new life in pictures. She has illustrated over sixty books for children including

many old favorites: Mother Goose, The Five Little Peppers, and stories by Louisa Alcott. In the picture book field her outstanding contributions are Mollie Whuppie, The Book of Christmas Carols, Nursery Songs, and Three Prayers.

RUTH STEED, who illustrated Rain and Shine, has used drawing as well as writing to convey her ideas from the time she was a little girl. She studied art at the Pennsylvania Academy of Fine Art in Philadelphia and at Cooper Union in New York. Her portraits for children are well-known. Among her illustrations for various publications are covers for the National Parent-Teacher Magazine. During her leisure moments in her home near Boston, she likes to turn her hand to refinishing antique furniture and redecorating old trays. The illustrations in Rain and Shine are examples of the rhythmic and imaginative qualities of her work.

INEZ HOGAN and ROMNEY GAY belong here among the illustrators of Reading for Interest, since they illustrated their own stories -- Miss Hogan, Bigger and Bigger, and Miss Gay, A Home for Sandy. Notes on their activities will be found in the section on the authors of Reading for Interest.

EDNA POTTER, who made the illustrations for Lost and Found, has illustrated about fifty books for boys and girls in the last sixteen years along with such other jobs as teaching reading, writing, and numbers in primary school and drawing and painting in high school, art school, and college. Some of her favorite books are Christopher Columbus, Water Babies, Singing Round the Year, The Big Goose and the Little White Duck. She has definite theories about illustrating. She says, "True illustration goes far beyond mere portrayal of incident. It is the work of the illustrator to give her audience something of the excitement, gaiety, sadness, or charm of the story. She must start him thinking and feeling. Also she must gain his interest at first glance."

EMMA BROCK, artist for Fun and Frolic, is one of the popluar illustrators for younger children, partly because she knows the art of selecting just the details that children love. She likes particularly to illustrate stories with humorous or odd characters, either people or animals. Whether she is drawing a sardine, a giraffe, or a locomotive, the characters have their own salty gusto. Among the books she has written and illustrated her favorites are The Runaway Sardine, Till Potatoes Grow on Trees, and Masha. In all she has illustrated about forty books. At one time she was a children's librarian, but gave that up to devote all her time to writing and illustrating.

DECIE MERWIN, illustrator of Luck and Pluck, thinks one of the most important qualifications for an illustrator is that she should enjoy her job. She's been doing this ever since she illustrated her first book, Magpie Lane, by Nancy Byrd Turner. She enjoys the challenge of poetry, never an easy assignment for any artist. She also likes to draw horses and dogs, and children in the awkward long-legged age between eight and twelve. Next to illustrating her own stories, Miss Merwin likes to illustrate her husband's books; for instance, John's Dragon or Bandmaster's Holiday. Her own latest story is Parachute Pup, a picture story with humor and imagination.

FRITZ KREDEL makes his debut in the school book field with Merry Hearts and Bold. Previously he has illustrated for the Limited Editions Club both here and abroad, such titles as Grimm's Tales, Slovenly Peter, and Tyll Eulenspiegel.

More recently he has illustrated some outstanding juvenile books: Defending America and The Youngest Camel. Technically, Mr. Kredel's European training gives him an advantage in his use of color and knowledge of offset printing. His line is clear and simple, his humor subtle. He is skillful in using colorful costumes and background without letting them dominate the human interest of his pictures. Mr. Kredel also designed the end papers for the Reading for Interest Series.

HARVE STEIN, illustrator of The Brave and Free, has specialized in illustrating historical adventure stories of early American or medieval periods, or foreign stories with a French, English, German, or Austrian setting. He thinks that too many books for children are produced entirely by adults. He has two young nieces who keep him in touch with the teen age and he has his young audience in mind when he draws. He is a great outdoors enthusiast and this enthusiasm enlivens many of his illustrations. Mr. Stein has illustrated about twenty books. His own favorites are Little Men and Sword of the Wilderness.

W. A. DWIGGINS drew the mark -- two children on a flying bird -- which is used on covers and title pages of the Reading for Interest books. He also designed the arrangement of the covers and advised on the use of types and colors. Mr. Dwiggins is distinguished as a typographer, book designer, illustrator, author, and wood carver. One of the hobbies he carries on in his studio at Hingham, Massachusetts is the carving of exquisite marionettes. His fame as a designer of types and books is international. Although his work shows wide variety in treatment and subject, it falls into no period or fashion but has a subtle quality that marks it as peculiarly his own.

A basal series --- of literary type

With the demand for enriched, interesting material written by recognized literary writers, the Reading for Interest series was planned and written. Each book was written by a recognized writer of children's literature. On each book, besides Dr. Witty, worked an educational consultant who is an educator and leader in her field. Each book is illustrated by a different artist, which adds variation for artistic growth.

Reading for Interest has above all literary integrity. The stories are not adaptations of familiar childhood material with changes which we have too often seen in reading material which destroy originality, style, and charm. It is not a revision of an old series. Even the material of a factual nature has good literary style. The earliest books, and in spite of limited vocabulary, are simple and varied but contain for the small children complete interesting stories with all the qualities of good literature.

1. Content is of high interest value

a. Stories in primary grades are based on the life experiences of growing up, play, school, other children, toys and pets, weather, nature, and ways of travel.
b. Stories of life in city, country, and at the seashore, as well as travel by air, expand the child's environment.
c. Stories of modern inventions, explorers, and adventure provide vicarious experiences.
d. There is a nice balance with social studies material. Curriculum connections are involved either in the background and setting of the story or in the main story itself.
e. Content has clearly defined plots, actions, and suspense.
f. There are stories about wild and domestic animals.
g. Stories carry children to other parts of their own country and to other parts of the world.
h. There are stories of heroes and great leaders.
i. Humor is an important elements these days when life becomes so tense.
j. Suspense is held throughout the stories.

2. Content cultivates taste and interest in good literature.

a. All the elements of true literature such as plot, action, suspense, drama, are abundant.
b. Understanding of places, people, events are given atmosphere and vitalized by literary interpretation.
c. Children's acquaintances with living authors and artists is widened.
d. Older classics are not neglected.
e. There is humor and nonsense to offset the comic books.
f. There are fairy tales which enchant the child.
g. Fantastic and imaginative tales carry the child into avenues of "escape."
h. Well-chosen poetry enriches the content for as Annie Moore says: "Children are responsive to rhythm. They delight in sounds and striking language effects. Poetry appeals to their senses -- full of childlike sensory images. Imagination of children enables them to see beauty and feel wonder. Poetry offers this experience. Children love nature.

Nature in various forms is the atmosphere of much poetry." As an illustration the primer, Rain and Shine, excellently gives the atmosphere to poetry for children in first and second grades.

i. Reading for Interest provides for wide reading in connection with the library. The manual gives suggestions, illustrations, and aid to the teacher. It helps the teacher to be guided to children's literary tastes. Too often free reading has been too free. Children have been bewildered. They have been thrown into too difficult material. They haven't found the material they truly like. Teachers and librarians, with good training and guidance, can be of such wonderful help in guiding children to select, to read, to appreciate.

j. Biographies of authors and artists are included in the manual. These provide for a widening of children's acquaintance with the authors' work. Children become discriminating. They recognize companions, their own likes and dislikes. The same is true with the work of the artists.

k. In the suggested procedures in the manuals, related activities are given which list stories which may be read by the children or by the teacher to broaden their literary experience.

l. Reading for Interest stimulates interests that will contribute to the wholesome use of leisure time and to the solution of personal and social problems, through the children's love of reading.

3. Content is well chosen for a development program of reading. Success in Reading is determined at every level by the suitability of materials and procedure.

Reading Readiness is developed before the actual teaching of reading begins. To force reading instruction on many children only results in retarding the development rather than accelerating it. Every teacher should be familiar with some of the suggestions for developing readiness. The first grade manual not only gives these suggestions to teachers but on pages 132 to 135 are Bulletins to Parents, helping them to patiently see the child's gradual and sequential steps into the reading process.

See and Read gives the teacher concrete ideas for:
1. Language development
2. Auditory perception
3. Visual perception
4. Hand-eye coordination
5. Vocabulary building
6. Classifying objects

It is suggested that teachers do not allow children to color, write, and use up these books immediately. Exercises may be gone over more than once. Exercises provide background to many skills. Use See and Read as a book before going into pre-primers. When children have sufficiently stepped from Readiness level in first grade, See and Read may be colored, marked, and taken home.

Preparedness in beginning reading:
Prepares in mechanics of reading
Prepares for the thinking side of reading

A casual and informal beginning in reading leads through:

1. Children telling stories. Teacher writes them on charts.
2. Experiences, common to groups and individuals are charted by the teacher.
3. Signs about room aid children to find material they need, or places to go.
4. Articles labelled make an informal connection to reading.
5. Bulletin board with daily "Goings-on" stimulate interest in the children's daily experiences.

At this level of learning it is essential to be guided by a well-chosen vocabulary.

The word list of Bigger and Bigger (46 words) provides a well-selected, usable list of words for guidance in chart-building. See page 153, manual for Grade I -- Beginning to Read. It contains verbs or "tie-up" words such as: were, had, went, grew, wait, could, was. Numbers that are within the child's comprehension and use such as: One, two, three, four, five, six. Little and big ..... school and house.... Common name words such as: babies, party, balloon, twins. The idea of twins not only is of interest to every child, but to the teacher is given the chance for natural double repetition for what one twin does, so does the other.

Our First Book is a series of charts (book form) for teachers who wish larger charts for centering class attention. The charts are based on Bigger and Bigger, the first pre-primer. Known children's experiences in chart reading help them to interpret and discover other experiences similar to that of the child on the printed page.

Sentence and phrase cards to be used in connection with Our First Book and the Pre-primers will be available.

Pre-Primer level

Bigger and Bigger, the first pre-primer, leads into Little Lost Dog, the second pre-primer. The careful selection and guidance in vocabulary of these pre-primers will enable the child to read and enjoy other "little" books or pre-primers. Often teachers prefer to complete the first year's reading on this pre-primer level rather than to force the children into primers.

D. C. Heath and Company is pleased to be able to suggest six beautifully illustrated pre-primers for this stage in reading. The content pertaining to animals and farm life is especially interesting. They are Our Animal Story Books: Our Dog Laddie, Biddy and the Ducks, Frisky the Goat, Little White Rabbit, Peanuts the Pony, Hundreds of Turkeys. (Books are listed in order of difficulty.)

With vocabulary ranging from 30 new words per book to 43 new words, they give much added reading without great word pressure.

Primer and First Reader level

Primer I, A Home for Sandy, is a lovely story with a simple plot about a typical American family, and a homeless little dog which the children of the family adopt. This book is particularly well written to insure ease in

development of reading skills. The interesting content ties up well with family responsibility and cooperation, with clothing, food, and shelter as these present themselves in curriculum themes.

Primer II, Rain and Shine, is another chronicle of family life in the immediate neighborhood. It centers around changes in weather, for all children are curious about the natural phenomena they notice. This book is particularly fine. Readiness material for helping the child to feel the atmosphere in poetry which so often evolves itself around rain, sunshine, clouds, waves at the sea, etc.

Book I, Something Different, takes children on excursions into their own community, with the two resourceful children of this book who have fun playing with their pets and a cunning baby in the neighborhood.

Look and Read is a practice book with exercises which accompany the first grade materials. It is designed to help make the first steps in reading easy, stimulating, and happy experiences for the child. So often workbooks bring in a "whole book full" of new vocabulary. Look and Read merely uses 34 new words which are used in giving directions to children. In using practice books in first grade, best results will be obtained when they are used under the guidance of the teacher.

Phrase Cards -- 130 phrase cards accompany A Home for Sandy (Primer I).

Word Cards -- Box II contains 465 word cards filed in alphabetical order to be used with all first-grade books.

Book II, Lost and Found, is particularly rich in details of different kinds of living in different kinds of places. This book is establishing a reputation for being the most beautiful second-grade reader available. Four delightful long stories and four sections of poetry take children to an island, a city, a mountain top, and an airplane field, and cover a wide range of things that children love to do. The stories give background and readiness for appreciating the poems which complete each section.

Book III, Fun and Frolic -- Fun and lively incidents predominate in the stories centered around many varied and fantastic characters. The plots hold attention, and although the vocabulary is controlled, the stories have true literary feeling. This book opens the door to wider reading.

Book IV, Luck and Pluck -- Here children widen their horizons by visits to out of the way parts of the world through adventure stories in which achievement and humor are important elements. Many of the stories have historical backgrounds.

Book V, Merry Hearts and Bold -- These stories have rich geographical and historical settings. There are many Old World folk tales and legends, true stories of the boyhood of famous men, and a selection of gay holiday poems.

Book VI, The Brave and Free, represents all parts of the Western Hemisphere, and particularly the different regions of the United States, with

realistic stories and poems, chosen to make children want to keep on reading and to furnish material for curriculum centers at this level. The authentic backgrounds are valuable for geographical and historical understanding. There are tales of adventures, daring, courage, and resourcefulness, of rollicking humor, of animals friendly and otheriwse, of sports and sportsmanship. The stories vary in style from episodes told with much conversation to accounts in essay or letter form.

Vocabulary Growth

Learning takes place as a whole. Ease in reading a word depends upon the child's background. It depends upon the arrangement within the sentence and relation to the unit of thought as a whole. Therefore let us be concerned with:

Unit Organization - Throughout the Reading for Interest series, and especially in the earlier grades, when the child is learning to read, "Units of Thought" are held foremost. In the middle grades, the arrangement was made as an aid to learning.

Sentence Structure - There are no long involved sentences. Neither are there so many short choppy ones that the reading becomes difficult. There are no meaningless groupings of words thrown in merely to add to a repetition count. The phrasing is planned for the understanding of content as well as eye-span. The excellent phrasing in "Lost and Found" has made this unusually helpful in second grade for this accomplishment. Good sentence and phrase structure materially help the child in learning words.

Repetition - Data on the average repetition of words does not always give the picture. The question is namely, "Is the high repetition on the abstract words which need repetition?" Teachers realize that name words and words with meaningful background are easily taught.

Again, "Are these abstract words taught so as to give a meaningful background?" Children find much meaning to where and here in the second pre-primer, Little Lost Dog. The whole first unit is Where is Skipper? Or where he was lost. The last unit is Here is Skipper. Or after he has been found. Too much meaningless repetition has been used in pre-primer and primer material which gives the effect of rapid reading only to be followed by a dreadful slump later in first grade or in second grade.

Distribution or Rate of Introduction -- Whether the number of new words be three or four per page, with the average number one, the question should be, Which words are introduced?" Related words such as made, blocks, house, will be easily learned because they are all meaningful but introduction of three abstract words per page would be very difficult.

Distribution of the words where comparisons may be made; where similarities and differences are observed, also help in learning. See pages 4, 5, 6, 17, 23 of "Little Lost Dog."

In the accompanying charts it is gratifying to see the large number of pages with 0 new words and the large number with only 1 or 2 new words. Even in Lost and Found (Grade II) there are

74 pages with 0 new words
51 " " 1 " word
41 " " 2 " words
51 " " 3 " " and
0 " " 4 " "

Difficulty of words is usually determined by their frequency rating on recognized word lists. The vocabulary in Reading for Interest rates high in the Gates, Thorndike, and International Kindergarten Union lists with which it has been checked.

Number of different words and of new words. Three standard lists directed the choice of these words. The 46 basic words chosen for Bigger and Bigger, page 153, Beginning to Read, give such tie-up words or verbs as: were, had, could, go, made, went, grew, was, (but not saw). Saw is used so often on experience charts such as "We went to the farm. We saw cows. We saw horses." Again there is not the chance for confusion with was.

The list also gives the numbers one, two, three, four, five, six which are within the comprehension and use of the young child. Again such words as little and big, school and house, help to make this an extremely well-chosen grouping of words. Such a list permits of the child's growth in reading and not frothy, meaningless repetition of such words as oh! oh! oh! or look! look! look!

Carry-over of Vocabulary - It is extremely essential in the beginning reading material to carry over from book to book the vocabulary which will need further repetition and use, namely the abstract words, along with words for continuity of thought. Name words, which are easily learned, are not carried over. Children, in fact, like new characters and it is surprising how well they remember them for each book, too. Such carry-over takes place in the Reading for Interest series and may be noted on the vocabulary charts on page 142 of the General Manual. Coordination of vocabulary has been made in all first-grade material (See page 143, General Manual).

In Fun and Frolic, Book Three, there are

1774 different words, including variants, compounds, contractions, and proper names.
1504 of these have either been used in preceding books or are among the first 2000 in the Thorndike Word List.
270 remaining words are new ones which are listed in the manual together with all new words that have a Thorndike rating of 3A or over. It also includes some new words with a lower rating than 3A (those in italics). They all appear in the word list because often they present problems of pronunciation or of confusion with other words.

Vocabulary difficulty was checked for Grades IV, V, and VI, first in the try-out with children and secondly in editing the material. Glossaries in Books IV, V, and VI are study helps for the child and guides for the teacher. They are particularly helpful in dictionary work, with syllable division and diacritical markings.

The words were chosen because of their value as clues to the context of the

stories; because of their value in a basal reading vocabulary; and because of their rating on standard word lists. Definitions fit the interpretation of the context. Page references facilitate the use of each word. Definitions are simple and within the comprehension of the child.

Phonics - With phonics interpreted as thoughtful word analysis, the manuals give aids to teachers. This program provides guided instruction on phonics as best suited to the needs of the pupils. Vocabulary growth through experience, learning words from context, observing similarities and differences all go hand in hand with thoughtful word analysis. See Beginning to Read, pages 102 to 108 and 137 to 149.

A Balanced Reading Method

The Reading for Interest series is of value in every reading program because the books are adaptable to all types of school administration.

Extending the literary side in reading: The reading procedures as set forth in the excellent manuals cover a wide range and follow the best modern methods. This series does not assume that there is one best way to teach reading or only one book to follow. Reading for Interest with its literary values provides the much felt need for extending the literary side in reading, thereby making a better balanced reading program.

The vocabulary -- Basically this vocabulary is sound for the development of reading. It also ties up well with other good reading series in the field. The method provides for the development of all reading skills.

Interest, a vital factor in reading: The attractive books and content bring interest into a reading program, not only to the children but to the teachers who are eager for live interest in their present programs of reading. It keeps reading programs from becoming crystallized.

Ideas in teaching given in manuals -- Teachers are active people. They like to do things themselves. They like to try new things. Especially at the present time with so many teachers returning to the field, the Reading for Interest series and its excellent manuals will give ideas and impetus for better teaching. They are not too detailed for the busy teacher but, with helpful charts, summaries, and pictures, they portray the best modern practices used.

General Manual -- Grades I to VI (for building use)
Grade Manuals -- Complete for each grade (cloth bound)
Grade Manuals -- Lesson procedures for each grade (paper bound)

Adaptable materials -- None of the books are labelled for the grade or grade level. They are marked in order of difficulty on an inside page. This enables the teacher to use the books to meet the reading needs of the children.

See and Read	--	Reading Readiness
Bigger and Bigger	--	Pre-primer
Little Lost Dog	--	"
A Home for Sandy	--	Primer
Rain and Shine	--	"
Something Different	--	Book One

Lost and Found -- Book Two
Fun and Frolic -- " Three
Luck and Pluck -- " Four
Merry Hearts and Bold -- " Five
The Brave and Free -- " Six

Our First Book -- Large chart in book form for group work

Sentence and phrase cards -- Box I
76 Sentence and phrase cards for chart and Bigger and Bigger
135 Sentence and phrase cards for Little Lost Dog
130 Phrase cards for A Home for Sandy

Word cards -- Book II
465 Words from the two pre-primers, two primers, and Book One

Practice Books:
Look and Read -- Grade One
Find and Read -- " Two
Learn and Read -- " Three
Work and Read -- " Four
Think and Read -- " Five
Study and Read -- " Six

Part of the exercises are related to the text and others supply content for word study, reading techniques, and special interests. They are of work-type material and check comprehension as well as afford extra practice on common study skills.

Format -- The size of the books is good. Bindings are strong and attractively designed and colored. The illustrations by foremost children's artists are in good taste, varied, and help to interpret the context. The type used is the Jansen, found by experimentation to be as legible as the Century. The size of the type meets standard requirement and children have no difficulty reading 14-point type. Some educational psychologists believe that eye movements are more likely to improve if they are not kept too long on large and widely spaced type.

A THIRD DIMENSION IN EDUCATION

Herbert Elkins, Keystone Company

Before proceeding we must define "third dimension." It has many connotations, depending upon whether we use it in connection with mathematics, geography, or astronomy. Webster says, in connection with mathematics: "A surface has two dimensions, as the surface of a sphere, to fix a point on which we must know its latitude and longitude. Space about us has three dimensions, since to fix one of its points, as a star, we must know its right ascencion, declination, and distance."

For our purpose we must understand clearly the difference between "perspective" and third dimension. In explaining perspective Webster gives as an example "a scenic picture giving an effect of extension of the vista." Note here that perspective is an effect, not a reality.

In teaching geography we have always considered only latitude and longitude. Rarely have we brought in any consideration of altitude as of any great importance geographically. This height or depth is the third dimension which we will discuss here.

In recent decades the development of aircraft has made the teaching of this third dimension necessary. Now we can fly over areas of the earth formerly inaccessable. We can also fly to any point on the earth's surface within sixty hours -- two and one half days. During the coming year this time will be cut in half. This will be done principally by developing aircraft which will fly at very high altitudes up in that third dimension we have so consistently ignored in our geography teaching.

To give our students an equal chance in the commerce and industry of this very small world, we must introduce into all our teaching a consideration of the effect of this third dimension. One way to accustom children to thinking in three dimensions is the use of teaching aids in the classroom that convey true concepts in all three dimensions. It is quite apparent that too many maps and pictures have been used that, not only delete any height-depth concepts, but are actually distorted and untrue. Some of this has been due to our attempts to reduce everything to presentation on a plain surface. Witness our books, especially the geography books -- long descriptions of places and things and at rare intervals a picture that is always in only two dimensions. The maps in these books are always on a single plain allowing the illustration of only two dimensions -- but worse yet the maps are for the most part copies of maps conceived decades ago in the horse and buggy and sailing ship era. There is nothing in them that shows the present relative size of the earth and location of places on its surface.

Our enemies in the present war were not backward in their development of maps employing the finest teaching techniques. The Germans' preparation of these maps was based on what Haushafer said about maps and pictures: "The intended effect should be visually obvious without study by the user." M s and pictures of this character prepared to teach the truth rather than the half ruths for which the Germans in many cases used them, will greatly modernize our teaching.

But even more important than improvement of text book illustrations and maps is proper use of teaching aids in which the third dimension is always shown. Among the important types of these are models. The globe, for example, is a model of the earth. It should be included in the equipment of every classroom. Other examples of models are scale built model trains, boats, airplanes, and the like. Dicramas are an arrangement of small scale models into a scenic display which tells the story of an historical event or industrial or agricultural process.

Specimens are samples of the real thing being studied. Pieces of mineral ores, pressed wild flowers or real ones, and small animals, are some examples. Each of these teaching tools inherently includes the three dimensions but each also involves certain difficulties of use in the classroom and difficulties of transportation and while not in use.

But there is available to all teachers one teaching aid which eliminates all these difficulties while including the third dimension concept, the stereograph. It is an actual photograph of places,things or processes, made with a two eyed camera which sees the subject from two different angles just as do our two eyes. The two separate pictures are mounted side by side on a card thus making a stereograph. We then use a stereoscope to view the stereograph. The viewer merely helps our visual mechanism fuse the two pictures, with depth. In viewing a stereograph we see exactly the same picture that we would see from where the camera stood when the picture was taken.

There are many reasons why the stereograph is one of the best teaching aids to three dimension thinking. The view through a stereoscope is very real. Pupils feel that they are actually at the place where the stereograph was taken or that they are participating in the activities shown. I have often seen children reach out their hands and try to touch a flower depicted in the stereograph they are viewing. Because of this realism a very vivid mental impression is retained by the pupil. And this impression is always truthful for no stereograph can be otherwise. Stereographs cannot be faked, like other pictures. Any attempt to alter a stereograph either on the negative or on the print spoils the illusion of the third dimension, thus spoiling the whole picture and rendering it useless. There is an almost unlimited supply of educationally fine stereographs available in many curricular subjects. The greatest contribution of the stereograph has been in the fields of geography and the social studies. Some other fields where a vast amount of material in third dimension pictures is available are art (especially sculpture where form is all important) and science (including all the natural sciences and geology).

Modern science is finding many new and valuable uses for the stereograph. For many years it has been used in connection with aerial mapping. This peacetime development is proving its value as a tool of war. Other war uses of the stereograph are in camouflage detection and aerial reconnaissance.

The compactness and portability of the stereograph makes it easy to transport and store when not in use. It does not become a nuisance when not in use as do some specimens. One stereograph will show almost as much as a diorama requiring much more storage space and that is difficult to transport. The stereograph is quite permanent for it can be handled by the pupils repeatedly without damage.

Probably the most important characteristic of the stereograph is its value as an individual study aid. With it the slowest pupil can have ample time to study in detail all aspects of the illustration. This can be done in a very nearly ideal study situation: a vivid realistic picture before him which he is privately viewing without interference from others. The hood of the stereoscope shuts out all outside distractions giving the pupil a real chance to study. This experience can be repeated by the pupils as many times as necessary and at the time best suited to clear up any questions regarding their lessons. It can help the returning absentee catch up with his class as no other teaching aid can.

Up to the present time only a few stereographs have been made in natural color. With the many new color processes the natural color stereograph is becoming increasingly popular. Restrictions, due to the war, on travel and photographic materials, has temporarily retarded the development of this type of third dimension picture. When it again becomes available it will probably be in the form of transparencies rather than the usual opaque picture. A special viewer with light behind the picture and passing through it to the eyes will be used with this type of stereograph. This same stereograph will serve the dual purpose of a projected lantern slide by inserting one side into the lantern slide projector. The projected picture will be only in two dimensions, however. Much of the value of the stereograph is lost if it is not properly used in the classroom. In deciding how to use it to the best advantage, it is important to remember that the stereograph is an individual learning aid. Some feel that this is its greatest weakness but teachers who use it properly know that it makes it more valuable. All learning must be individual. We can learn with others but not for them. Nothing is truly learned until it becomes our own. Some children need more individual study than others. In these cases stereographs are especially helpful.

Stereographs should be used as reference material. Put them on the study table in primary or elementary school classrooms. Assign definite views to be studied as part of the lesson and pose questions that should be answered by the pupils in looking at the pictures. In secondary schools the same technique is used but with the stereographs made available in the library rather than the classroom.

Only a few stereographs should be made available at one time. Because they are so interesting pupils will rapidly (and without really studying them) look at every picture available, then lose interest in the whole group. Concepts are vividly presented in third dimension pictures. Using too many at one time leads to confusion on the part of the child when there is not ample teacher explanation and class discussion, of the concepts presented.

These should illustrate topics being studied at the time they are put out for use, thus correlating them with the other classroom work. I have often seen teachers put out for their class several units of twenty-five stereographs each on the various areas of South America although the class was at the time studying only Brazil. These same teachers would never think of bringing <u>books</u> on Argentina and Columbia into the classroom when the class was specifically studying only Brazil. A few good pictures appropriate to the subject and thoroughly studied are far better than a great many only glanced at.

Ample time should be allowed so that each pupil will have repeated opportunities to study the stereographs thoroughly. The content of information in each third dimension picture is much greater and therefore more time is required for the pupils to grasp it. Some pupils will need longer than others so no time limits should be set within reason. Plenty of stereoscopes should be provided so that several pupils can see the pictures at the same time.

The table where stereographs are used should always be in a well lighted part of the room;otherwise a great deal of the detail in the pictures cannot be seen.

Stereographs can be used in all curriculum levels and in many subjects. In the primary grades they serve as a background of vicarious experiences for reader stories and oral expression by the pupils. At the elementary level they give a realistic and truthful concept of things and places outside the experience of the children, about which they are studying. In the secondary level their chief value is in the life sciences, geology, mathematics, and art.

But most important of all is their giving to our students the three dimensional viewpoint so sadly neglected in the past.

THE VALUE AND USE OF BASIC READERS IN A MODERN PROGRAM

Mrs. Lillian Gray, Associate Professor of Education, San Jose State College

A Balanced Reading Program

Current practice provedes for children a three-fold reading program as follows: (1) developmental reading, or consistent and systematic training in reading skills and habits via the use of a basic reader; (2) reading in the contents fields of social science, natural science, etc. (3) remedial instruction if needed, though the trend is toward making the developmental program so strong that fewer reading casualties will result. However, the scope of this paper is limited to a brief consideration of one aspect of this total program i.e. to problems connected with basic reading instruction, and, by inference, basic readers.

Value of Basic Instruction

The need for basic training exists in every important human activity from learning to fly an airplane to reading a book. In the field of reading the majority of our states recognize the value of laying a dependable foundation for reading by setting aside a definite period daily for skill-building. During this period specifically suitable materials in the form of sets of basic readers are designated for use by means of state adoptions.

In the first three grades daily periods of basic instruction in reading have been generally utilized. It's a different story in the middle and upper grades. According to Dr. William S. Gray:[1]

> "During the last ten or fifteen years basic instruction was discontinued in thousands of school systems on the assumption that adequate growth in reading would result from a large amount of free reading and from guidance in reading in the content subjects. Experience and the results of experiments both show clearly that this is not the case. A large majority of the pupils in grades from four to eight are in urgent need of systematic guidance which aims to improve their reading interests, habits, and tastes."

Thanks to a good deal of adverse newspaper publicity, it is no trade secret that tests given to the army have revealed that great numbers of our soldiers can scarcely read at the fourth grade level. Faced with this situation which spotlights some fundamental lack in our instructional program, educators have sought for needed reforms. In so doing they have traced the blame for ineffective reading habits to the practice in many school systems of omitting the use of basic reading instruction beyond the third grade. Isn't it a suspicious coincidence that growth in reading leaves off when steady training in the basic skills comes to a halt?

In agreement with this point of view Robert Hill Lane[2] says:

---

1. Gray, William S. Basic Reading Instruction in Grades Four to Eight. Teaching Trends, Number 19. Scott, Foresman & Co., Chicago, 1943.
2. Lane, Robert Hill. The Teacher in the Modern Elementary School. Boston, Houghton, 1941, p. 276.

"Extensive reading in the sense that many books are read does not appear to be the panacea for all reading difficulties which its proponents held it to be, and the theory that the reading period as such, i.e. definite planning in the daily program for the teaching of, and practice in, specific reading skills is unnecessary and oldfashioned, is falling rapidly into disrepute."

As Dr. Peter Spencer has often pointed out, there is infinite breadth and scope to this activity of reading. Only that reading program has value which gives children direct guidance in using the many types of reading demanded by our complicated civilization. Without definite training how can children learn to use all the different reading gears they will be expected to apply in life? Think how handicapped an adult would be who used the same set of reading habits for reading income tax instructions that he employed in enjoying a poem! In the first instance, of course, verbatim understanding is a "must," whereas in the second, calling upon the imagination for free interpretation is highly desirable. If any doubt is entertained on this subject, just picture trying out free personal interpretation in following the instructions on your ration book or explicit obedience to Omar Khayyam's invitation to repair under a bough on your school campus for a jug of wine.

Merely to recall how all day long our eyes are busy roaming about through mazes of print is to be convinced that we do many kinds of reading for which children should be prepared. We read "stop" and "go signs, crucial headlines, restaurant menus, professional literature, ketchup labels, bestsellers, insurance policies, cookbook recipes, victory garden hints, letters -- all in the course of an ordinary day. And we gear our reading to suit our purpose and material in somewhat the same way that we drive a car at different speeds, depending upon our errand and the type of traffic encountered. To speed past the rich subtleties of Katherine Mansfield's literary masterpieces at the same pace we boom through a detective story would be as wasteful a process as speeding past lovely California scenery. Some types of material cry out for the reader to stop and admire a turn of phrase; other types warrant only skimming. In many cases it is sufficient to be able to give the gist of a selection in your own words -- not so with reading a telephone number. Your own private version of one you've looked up will get you exactly nowhere.

Basic Readers Serviceable to the Learner

1. Since basic readers offer a broad spread of content in the conveniently organized form of units, they permit practice in a wide variety of reading activities. If the teacher makes use of the lesson plans outlined in the manual for highlighting the values in each selection, children will receive a well-rounded, practicable experience in oral and silent reading skills, habits, and interests. Fortunately for children we don't often run across a teacher as self-satisfied as the one who was heard to remark: "I've taught third-grade reading for five years now, but do you know that even yet I find a point or two that I must look up in the teacher's guidebook."

2. Basic readers not only furnish practice in representative reading skills but acquaint the children with established classifications of material. Through their school readers children receive an introduction to folk tales, fairy stories, plays, poems, letters, short stories, history, biography,

travel, nature and science, myths, legends, etc. Thus reading tastes are fostered which children may follow in their supplementary and recreatory reading.

3. Inasmuch as the best basic readers today follow the plan of emphasizing the life values of what is read through the organization of content into units that meet vital everyday interests, children receive through them valuable training in classifying their thinking. Up to date manuals suggest that children be led to classify the story they are reading during the group interpretation.

4. It is a wellknown fact that if vocabulary is confusing children's interest is checked. The most modern readers, therefore, gear vocabulary to the learning needs of pupils and articulate it from year to year of learning growth. A carefully "ramped" vocabulary with a gradual "rise" or introduction of new words enables the children to take recognition problems in stride.

5. The workbooks which accompany basic readers are genuine reading helps if they avoid the oldfashioned type of meaningless busywork and instead promote thinking. I am most enthusiastic about the "Think and Do" workbooks written by Dr. William S. Gray and Dr. Marion Monroe.

6. Because basic readers come in sets the teacher can utilize her time to greater advantage in presenting new vocabulary and arousing interest in the story for ten or twelve children in a given reading group all at one time. No one but a contortionist could teach thirty-six individual reading lessons a day as some extreme advocates of individual guidance propose. When all the children in a group have enjoyed the same selection social gains accrue. By linking up story happenings with their own experiences children can feel "at close quarters with the challenge of contemporary life." Comparing story characters to real ones or to personalities in other stories offers interesting opportunities for the exchange of ideas. It enhances the value of human companionship to be able to discuss what one has read with others in an interesting way. The basic reading period stimulates such experiences.

7. If a set of readers is used there exists not only a common basis for presentation of new vocabulary and concepts but the opportunity for referring back at any time for informational material, descriptive phrases, check-up instructions, etc.

8. An advantage to the use of basic readers which is often overlooked is that a teacher can make more elaborate guidance plans if she is faced with teaching one book rather than attempting to split up her time into thirty or forty individual motivations.

9. Furthermore, the teacher can get better acquainted with the content of the basic set of readers she is using. It would be mortally impossible for her to know thoroughly the content of all supplementary materials. Anyone who has taught reading knows what a tremendous advantage it is to know your material thoroughly.

Using Basic Readers

An old Negro minister with silvery wool hair was asked how he planned

his sermons. "Brethren," he said, with dignity and deliberation, "Ah'll tell you how ah does it. Ah takes my text and splains it. Den ah mystifies it until ah can sprangle out for a while. Den I puts in de rousements."

There, save for the "mystifying" you have in essence a blueprint for planning a lesson. There must be some feeling for form - for having a beginning, a middle, and an end. Anyone with any respect for the art of teaching reading can but wince upon hearing this venerable direction: "Children, let's all turn to page 14 and follow along in our books while Myrtle reads aloud." Where are the "rousements" pray, in such a direction? And what became of "sprangling out"? Even though a teacher conducting such a lesson may occasionally interrupt to supply a needed pronunciation or to caution: "Read with more expression," she isn't teaching reading; she is hearing it. Active guidance in reading skills and interests is demanded if children are to make an orderly attack on print. And this guidance takes careful planning.

Primary Reading Plan

1. Preparation for reading. There are three main jobs to be done in this five or six-minute period which is to get the children ready to read the story in the book. (a) Present new words and their meanings; (b) check on recognition of new words and meanings; (c) arouse interest in the story by means of displaying suitable pictures and other visual aids, holding a discussion, etc. We once heard of a student teacher who was motivating like anything a story that featured a squirrel. She said: "I want you to guess what we're going to read about. He's been skurrying around all autumn while the leaves have been turning brown. This winter his friends won't have anything to eat but he will because he's been so busy. Can you guess who he is now?" "I can," said one of the first graders. "Mr.Willkie." It is needless to add that the attempt to arouse interest should more successfully relate to the story in the book!

2. Guiding the reading. At this important stage of a basic reading lesson the teacher asks the motivating question which will require the reading of the whole story in the book to find the answer. To insure that the question has been understood, it should be repeated by some child. The teacher then has the children find the unit in which the story appears, in the table of contents, and turn to the first page of the selection. The title and picture are discussed. The teacher then asks a guiding question. A good sequence to follow in primary reading is to ask a question that will bring out plot enjoyment and understanding, have silent reading, and call for the answer either in oral reading or in the children's own words.

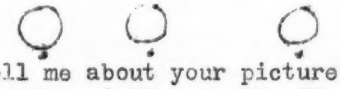
Note: In the guided reading the story should not be located in space with such directions as "Read the next line," or "Read the next page," or "Read the next paragraph." These directions focus attention on form. What is wanted is thoughtful interpretation. Therefore, such guiding questions should be used as the following: "Here comes somebody down the road. Let's find out now who he is." or Let's see what Baby Sally found in the big box." or "What did Jane like better than anything else?" Questions should be worded within the confines of children's interests and should appeal to their love of surprise and fun.

Answering the big motivating question and linking up the story content with the children's own experience winds up the guided reading period. The children should be encouraged to classify the story just read and tell whether it was about fun. or work, or things that go. They then converse about the story led by such questions as: "Do you think this story could be true? Is that the way you expected Sally to surprise her brother?" etc.

3. Rereading. In primary grades stories are short enough to be reread either immediately after the group discussion listed above or at a later period. The purpose of the first reading, of course, is to find out what happened or in other words to enjoy the plot. The second reading is to get finer details. Children should never be asked to reread a story to "see if you know all the words." Imagine an adult reread a Saturday Evening Post story for that purpose! Children can reread to get ready to give a dramatization or put on a puppet show or to get the points clear so they can tell the story to another group or to their folks at home, etc. Or they may reread it to find the funniest part, or the most exciting part.

4. Practice. Drill or practice related to the children's needs is given individually when the children follow up the reading in the book with a corresponding exercise in the workbook which accompanies the reader. This is a valuable part of the children's reading experience. Group review can be carried on at the blackboard or chart, using suggestions furnished in the teacher's manuals for related practice. At this time sensible and practical use of phonics may be used. The fact should be recognized that phonics is only one means to word recognition.

5. Correlated Activities. These are follow-up or enrichment activities which extend concepts met with in the reader and recognize the need of children to apply what they learn. They may dramatize stories they have read; read other stories of similar material; sing songs related in theme; learn poems with linking content; draw pictures to illustrate their favorite parts. Sometimes having the children illustrate a story or poem gives the teacher a valuable clue as to the level of the child's comprehension. In this connection there is a story about a third grade teacher who was strong on literary appreciation, did a lot of reading of poetry to her class. After teaching the youngsters "The Old Oaken Bucket" she asked if the children would like to draw pictures to illustrate the poem. One youngster did his picture in no time, and she slipped down the aisle to look at it. He had drawn three circles with a dot under each.



"Wouldn't you like to tell me about your picture?" she asked. So the boy proceeded. "Here," he said, pointing to the first circle, "is the old oaken bucket," to the next, "this is the iron-bound bucket," and to the third, "this is the moss-covered bucket that hung by the well." The teacher swallowed visibly but went on to inquire about the three dots. "Oh, those are the spots that my infancy knew."

Some"Don'ts" for Primary Teachers of Reading

1. For the sake of suspense, surprise, and interest don't have all the pictures in a story inspected before the verbal text under each is read.

Keep an elastic band on the unread part. Just have the children look at the pictures as they come to them, reading the verbal text below each before turning to the next picture. Otherwise, plot enjoyment, which is largely revealed by pictures, will be cut into ruinously.

2. For the same reason don't allow the children to keep basic readers in their desks or carry them home. If the children look ahead you won't have a successful guided reading period when all may enjoy the story together.

3. Don't sashay from one series of readers to another if you want the children to derive benefit from a carefully graded vocabulary in a given series. Each set of basic readers has its own vocabulary scheme, though there is, of course, some overlapping.

Lesson Planning Beyond the Primary Grades

While the same steps used at the primary level should be used in the intermediate and upper grade basic reading periods, a few differences in technique should be noted. For one thing fewer guided questions are needed at these higher levels. In fact, the teacher may often ask a motivating question and have the children read the whole selection silently to find the answer. However, the preparation for reading, the group interpretation, related practice, seatwork, and correlated activities are still in order.

A second difference between primary and intermediate and upper grade reading is found in the area of oral reading. In the first grade, children need practice in looking at words as well as hearing them and so may look on while another child is reading orally. In the upper grades it is more desirable to use what might be termed the "only-one-book-open" technique during oral reading. This is the way the method works in a basic reading lesson. The teacher asks a question. The children find the answer through silent reading. The teacher calls on someone to read the part he thinks answers her question. While he is reading aloud the other children and the teacher close their books, marking the place, and listen to see if they agree with the part chosen to answer the original question. How much better is this practice than the old-fashioned method of having one child after another stand and read out loud for better or for worse. It provides interesting oral reading does this only-one-book-open technique, and gives genuine preparation for real audience reading.

Naturally more silent reading practice than oral is given at the upper grade levels but since both are used in life the oral aspects should not be neglected, especially since oral reading furnishes a clue as to mental phrasing, thought-grouping, etc. For example, a seventh grade boy read a sentence: "I'm a soda, jerk." And the teacher protested, "There must be some other way to read that!"

Summary

To insure, at all maturation levels, continuous development of reading habits, attitudes, and skills, regular basic instruction should be given daily, making use of modern readers. Each of these basic reading periods should be efficiently planned. To realize how subtle and complicated is the

influence of reading upon the lives of children, the teacher might paraphrase Walter de la Mare's delightful little poem about osmosis and say:

"It's a very strange thing
As strange as can be,
That whatever Miss T reads
Turns into Miss T."

VISUAL AIDS IN CONCEPT DEVELOPMENT

Martha T. Farnum, Coordinator of Instruction, San Diego City Schools

Before a large exhibit case of raccoons just placed in the front hall of Logan School one child questioned, "Is them dogs?" "No, them is polar bears," someone responded. Still another countered "Rats! Huh?"

These spontaneous comments and questions overheard during the first recess of the school life of the raccoon habitat group are indicative (1) of the nature of concept formation, (2) of the educational demand for teachers to plan significant experiences to help the child build up his fund of accurate, usable concepts.

Obviously these children did not stand before the exhibit analyzing common traits of the animals in the case with dogs, polar bears, rats they had known as to size, shape, number of legs, color, tail, ears, etc., making point by point comparisons with the strange animals, striking out the unlike traits, and using the traits they have in common in the process of identification. Unfortunately, the process described above is a rather commonly mistaken belief on how concepts arise. Dewey, in How We Think, p. 155, explains that concepts begin with experience:

> "....the child begins with whatever significance he has got out of <u>some one dog</u> he has seen, heard, and played with. He carries over from his experience of this one object to his subsequent experiences expectations of characteristic modes of behavior; he expects them before they show themselves. He assumes this attitude of anticipation whenever an object gives him any excuse for it. Thus he may call cats 'little dogs' or horses 'big dogs.'"

In this process he notes that expected dog characteristics and behavior are not present and he eliminates certain traits from the dog-meaning, while other traits are selected and emphasized. Again quoting Dewey,

> "As he further applies the meaning to other animals, the dog-meaning gets still further defined and refined. He does not begin with a lot of ready-made objects from which he extracts a common meaning; he tries to apply in every new experience whatever result of his old experience will help him understand and deal with it....
> "During the whole process he has been trying to fit his idea, vague or definite according to his <u>stage of experience</u>, on all animals that are at all similar to dogs, applying it when he can, becoming aware of differences whenever it won't fit. By these processes, his idea gets body, steadiness, distinction; it becomes a concept."

Our three children were applying their experiences with animals. The first child's "dog-meaning" has received a pertinent explanation in the quotation from Mr. Dewey. The "polar-bear" meaning was stated by a third grader who had just had a trip with his third grade class to the zoo. He was eagerly applying his new experience to a new situation. "Rat-meaning" is easily understood by the experiences in the community in a rat extermination drive. "Rat-meaning" has been in the foreground of importance in many homes recently.

The beginner, or the person advanced in knowledge and in scientific background, must each set about understanding something new or a new aspect of something familiar through direct experience or through imagining the existence of traits and characteristics involved by reorganizing or making new combinations of the elements of meaning he possesses.

Stuart Chase, in Tyranny of Words (page 17), states that "meaning implies a check back, a reference to the hearer's experience in the world outside."...(Page 9) "When people can agree on the thing to which their words refer minds meet. The communication line is cleared." All that the spoken word, the picture, the printed symbol can do is "re-present" experiences and concepts which the individual has accumulated in his mental storehouse, to bring to the word sounded, the word printed, or the word illustrated. Ideas are not conveyed; they are constructed out of the individual's own experience.

A newspaper clipping may serve to give us adults a first hand experience in the process involved in concept development. Let's observe in ourselves how elements of meaning can be gleaned from a verbal characterization and clarified by a flat picture. The headline of the new item is "Kinkajou Lost." The lead sentence and first paragraph of the article follow: "Lost: one kinkajou. That was the report last night on police detective files. Mike Donnelly, detective lieutenant, wanted to find out what was lost." Does anyone have an accurate concept of what was lost? A vague concept? An incomplete concept? Does anyone lack a concept entirely? Let's with Mike Donnelly take recourse to the dictionary. He found this in the dictionary: "A nocturnal arboreal carnivorous mammal inhabiting Mexico and Central and South America." Now has anyone a complete concept? Let's go on."...three feet long, slender body, long prehensile tail, large lustrous eyes, soft wooly yellowish brown fur, easily tamed." Now would someone describe his concept of a kinkajou? Before looking at a picture copied from the small sketch in the dictionary let's name animals with which we might associate this one. Let's see how the picture helps us. Now let's name animals whose appearance is similar to the kinkajou.

Illustrations and the meanings given in a dictionary are second-hand expository definitions. They should be used so as to stimulate the learner to try to apply, to exemplify, to verify the meaning through personal experience. They should never become substitutes for individual observation and individual experimentation, if real experience is at all possible. By visiting a zoo we adults can make our concept of this new animal much more complete by actual experience with it.

Dewey, (How We Think, p. 15) characterizes what educative experience is in these trenchant words:

> "But at every stage of development, each lesson, in order to be educative, should lead up to a certain amount of conceptualizing of impressions and ideas. Without this conceptualizing or intellectualizing, nothing is gained that can be carried over to the better understanding of new experiences. The (intellectual) deposit is what counts, educationally speaking."

In the following quotation (p. 154) he points out why activities are not always educative:

"A variety of worth-while experiences and activities with real materials is introduced, but pains are not taken to make sure that the activities terminate in that which makes them educationally worthwhile, as distinct from an agreeable passing of the time -- namely, the achievement of a fairly definite intellectualization of the experience. This intellectualization is the deposit of an idea that is both definite and general. Education in its intellectual aspect and getting an idea from what is experienced are synonymous. What does having an experience amount to unless, as it ceases to exist, it leaves behind an increment of meaning, a better understanding of something, a clearer future plan and purpose of action: in short, an idea -- a genuine concept."

How can teachers help children develop needed concepts:

1. Know her pupils thoroughly: differences in experience background; difference in environment due to social, cultural, economic, and geographic influences; difference in special aptitudes and interests; differences in personal purposes or drives; differences in intelligence; differences in personality and academic needs.

In a recent book of the month selection, We Took to the Woods, the author, Mrs. Louise Dickinson (p. 145) characterizes the problem of the different experience background of her son in the heart of the forest, where nobody lives but deer, bear, and wildcats; and where the means of transportation is still that of the Indians via the lake, in relationship to school entrance in these pertinent words:

"I certainly hope the school authorities don't start out by giving him an Intelligence Test before he's learned the ropes...All the questions dealing with such common things as running water, electric lights, hens and railroad trains will leave him completely in the dark, and they don't ask how to tell a fox track from a dog track -- a difficult thing that he can do easily -- or how to use a birch hook, or how to employ a 'cant dog' to its utmost efficiency. I suppose that is what the textbooks dismiss blandly as Feeble-mindedness by Deprivation."

2. List the concepts in a given area of experience or field of content which might need to be developed, which she foresees might be incomplete, vague, incorrect, or entirely lacking for her pupils as she knows them.

3. Plan to provide rich varied first hand experiences in needed areas through excursions, construction activities, practical experiences, demonstrations, experiments, social experiences and games. There is no substitute for first hand or actual experience. Personal experience is invaluable.

4. Plan significant second-hand experiences to develop needed meanings through use of pictorial materials, exhibits, museum specimens, reading matter, songs, shared experiences.

5. Set up innumerable situations causing children to think about, talk about, interpret, and use their experiences in further work. Provide opportunity to summarize their findings and generalize their learning: What did we learn from our trip to the zoo? How did that book help us to answer our questions? What have we learned about the -- up to now? What have you learned that you did not know before?

"As the result of a unitary experience the learner should arrive at some new concept or generalization which grows out of and transcends the activities of the unit and is transferrable to other situations." T.M.Riley.

6. Appreciate and utilize the importance of effective language instruction in clarifying thinking and building a meaning vocabulary. Harrison, page 147 of Reading Readiness points out the significance of language facility in these words:

"He will be able to use it (a word) in reading insofar as he is able to use it in his language and thinking."

McKee emphasizes oral language activities in his article on The Teaching of Reading, a Second Report, 36th Yearbook, Part I, National Society for the Study of Education entitled, "Vocabulary Development":

"Numerous opportunities should be provided under the direction of the teacher for the children to carry on informal discussion among themselves, to exchange experiences and ideas, to question one another concerning experiences spoken about, and to engage in conversations, story-telling, simple explanations, and other important oral language activities....In connection with all school activities, provision should be made for children to talk about the concepts that are being developed."

Language usage causes difficulty. A child who uses bucket in his daily speech may attach no meaning to the term pail, although his concept of the word is accurate. That child does not associate the concept in his mind with the word he hears or sees on the printed page.

Careful attention to the oral expression of children will indicate to the teacher the need for clarification of concepts and for overcoming confusions in concepts. Keep a notebook record of children's needs for more discriminative use of concepts.

According to Frances Jenkins in Language Development in Elementary Grades, page 24,

"Talking about the idea makes the idea clearer, straightens out misconceptions, and indicates partial understanding. On the other hand, adequate use of language shows that the ideas are clear and readily usable. This necessity for clarifying ideas through language is one of its main functions."

From worthwhile experiences young children are able to make fine distinctions in the use of terminology. During a block play period in a kindergarten following a visit to a dairy farm the following technical concepts were used with precision in informal comments and conversations in reliving their experiences: pasture, corral, stanchion, silo. One child questioned, "Is this a Guernsey or a Jersey cow?" Nevertheless, the teacher was busy recording needs for future experiences in concept formation. One child said baby cow consistently, because he lacked the word calf. In speaking of building a silo with blocks, a child showed confusion of "longer" with "taller." The teacher in reading the story "Angus and the Cat" by Flack, showed her

alertness by teaching the children to discriminate between taller and longer in this part of the story. "Each day as Angus grew older he grew longer but not much higher. Scotties grow longer, not taller. Scottie dogs grow that way." Of course the pictures in the text made the Scottie image very vivid. The need for the concept "enough" was manifested by the child who demurred at having another child take two horses away from his pasture by saying, "Now we ain't got more."

The art of teaching is a necessity even when children have the benefit of real experiences. Frequent generalizations are needed to prevent misconceptions and confusion. A first grade had been caring for plants in the classroom. Through the activities of caring for the plants: watering, loosening the soil, using fertilizer, the children built from their experiences a concept of plant needs. Later a child reported having a live turkey to take care of. In discussing what John would have to do to take care of his turkey the children suggested providing a comfortable home, food, and water. One child spoke up "and fertilizer." He had somehow generalized the need of living things for food as a need for fertilizer, which is, of course, food for plants. It is mandatory to take time to make and check generalizations if experiences are to be educative.

Harrison, in Reading Readiness, page 143, illustrates vague and confused concepts by the story of the child who was asked, "What does daily mean?" The child responded, "Why, you look down the street and you say, Here comes the daily." The boy was referring to the wagon, not the paper, because he was more impressed with the moving vehicle than the stack of newspapers thrown off on the corner.

A special class of 15 physically handicapped children was shelling peas to make vegetable soup. When asked, "Where do we get peas?" one child glibly replied, "from cans" and proceeded to shell the peas. Another child said, "from the shell." Here the activity of "shelling" peas had made the term "shell" acceptable for the word "pod." Not a child in the group could give the word pod. The discriminative response "pod" would result only from teacher guidance.

7. Recognize the importance of providing children with experiences in auditory recognition before attempting visual recognition of words. Children of different racial background and bilingual children find auditory discrimination especially difficult. A reader had the sentence, "The ball came rapidly." A teacher who had learned to take no meaning for granted asked a Mexican boy in a fifth grade, "What does rapidly mean?"

Manuel: "I don't know."
Teacher: "What does rapid mean?"
Manuel: "Oh, I know, the ball came wrapped up like a Christmas present."

A colored mother, when the school nurse complained of the lack of cleanliness of her children, responded, "I tries to keep my house cemetery, and my children sterile."

8. Take into consideration in teaching procedures that learning a new concept for a familiar word is often more difficult than learning a new word. Plan to look ahead and give the children experiences with the unfamiliar concepts of words which have multiple meanings. If a word is to be used with

more than one meaning, the children's concepts should be enlarged before they meet that word in reading. Word forms such as get, run, aside, with, up are so well known to the teacher that the child's inadequacy can be overlooked easily. The word "up" is confusing and contradictory in its various meanings. It can mean nearer to: "He went up to the person"; away from:"Baby waved and watched father walk up the street"; height: "The kitten climbed up the tree when the dog came," "The balloon went up into the air," Other uses of up: "the rabbit came up from his burrow under the ground." "He spoke up quickly when the teacher called on him." "The package was wrapped up by the clerk." Reading Readiness books now provide picture sequences to develop words with multiple-meanings. Books should have concept lists as well as word lists.

Discussion and questioning unearths misunderstandings and points to the need for clarification of the concepts of words with multiple-meanings. A first grade reader had the sentence, "Father bear gave the little bear a blow over the head." For some reason, the teacher was dubious about the child's meaning. She said, "Come up and show me." The child came up and blew his breath over her head. Understanding is blocked and incorrect meaning is achieved when the child does not know the correct concept for a particular context and uses the concept he possesses.

A special class child made a beautiful hand-carved book for the secretary of the School Civic League. He could not quite comprehend the expression "minutes of the meeting." He practiced his sentence parrot-like: "I made this book for you to keep the minutes of the meetings. When he actually made the presentation speech before a full auditorium of upper graders, he made a long pause and finally said "to keep the time of the meetings."

9. Plan to give simple explanations of new or partially familiar concepts. The teacher should use much detail already very familiar to the children to explain the new concepts.

10. Make every effort to develop in children attitudes of dissatisfaction with lack of meaning, with incomplete, vague, incorrect meanings. Encourage children to ask questions, to check up on meanings through their own observations, to develop attitudes of inquiry and an aggressive interest in accuracy.

We have stressed the importance of first-hand and second-hand experiences in concept development throughout this paper. We will by request give special consideration to one type of aid, still or flat pictures, attempting to characterize what is involved in "reading" pictures and how to utilize them to the best advantage in forming concepts.

The need for a picture in concept building is often very specific. Definite questions and problems motivate reference to pictures. Still pictures frequently serve to supplement real experience, to clarify thinking, to straighten out misconceptions as discussion and further activity point to needs.

San Diego for over eight years has had a curriculum center engaged in making the resources of the local environment available for classroom use. Illustrated books produced at the center tell the story of local industries

such as the sawmill, tuna canning, citrus growing. Photographs present the step by step processes for closer study. Large framed paintings depict the story for classwide use. Teachers continue to make excursions but have these educational resources to recall experiences, solve problems, check up on learnings, clarify concepts. These instructional materials enable the child to identify himself so intimately with the life of his own community that extension of his experience from the "here-and-now" into the unfamiliar phases of the industry, for example, becomes an easier step.

Sometimes the use of a variety of types of visual aids in developing a given concept proves very advantageous. Use of a large framed picture, for example, of lumbering operations to get logs out of the forest permits the entire class to focus on the problems involved. Film strips and lantern slides have that same advantage and may add color or impressions of action, distance or speed. The forest viewed through a stereoscope adds to the child's experience, the feeling of depth so essential to a child in Southern California in building a forest concept. The child can project himself so readily into the setting pictured in a stereograph and feel that he is a part of the situation depicted. Stereographs have a unique contribution to experience through the addition of the third dimension that teachers should not overlook a table with a small number of carefully selected stereographs to illustrate current instructional needs or problems can be an extremely educative center.

If the basic principles underlying concept development are utilized no teacher would make the mistake of crowding too many visual aids in a single lesson. Giving children time for informal comments, questions, discussion generalization, should preclude the possibility of using too many. Breswell in his studies of what takes place when we look at a picture makes a plea for giving children plenty of time to look at the picture. He claims that a child takes "two looks" at a picture before he is ready for teacher directed looks. His first glance is used to get an overview -- to learn its setting, what it is about. His second look is usually at the parts that relate to his previous experience and that therefore interest him. The third look is the teacher's. After his initial curiosity is satisfied the pupil is ready to look at what the teacher wishes him to discover, what she wishes to emphasize or point out. Sometimes teachers' purpose and pupil's purpose are the same.

Teachers must guide the "reading" of pictures by helping children find the hints, the comparisons and contrasts, the indices of size, speed direction, temperature. Pictures are abstract in those elements which are unfamiliar to the pupils. His visualization cannot be complete if he has no experience background for them.

Criteria for selecting pictures are set forth by McKnown and Roberts in Audio-Visual Aids to Instruction, as follows:

1. Is it purposeful? Relevant? Significant?
   Does it show clearly the points desired?
   Will it really aid? specifically, just how?
2. Is it truthful? Accurate? Authentic? Up to date? Complete?
3. Is it easily understood? Simple in composition? Proper in emphasis?
4. Is it stimulative? Interesting? Will the pupils study it seriously?
5. Is it suggestive of reality? Action? Contrast? Comparison? Continuity?
6. Is it appropriate to the age and grade levels of the pupils?

7. Is it artistic in elements, composition, lines, color, and finish?
8. Is it a good print? Clear and distinct? Free from blemishes?
9. Is it of practical size? Large enough to show details, and small enough to be easily handled and used?

Study of textbook illustrations in recent years is interesting. Many textbooks may make the illustration the starting point. The text amplifies the illustration. Reading readiness books lean heavily on illustrations. Some new science materials for lower grades forces most of the pupils' attention on the picture. We Look and Learn is an example. The child development readers edited by Hahn precede each unit of reading material with a section of photographs to help develop needed concepts.

Our goal in the use of teaching materials is to make the child's experience as life-like as possible. Observing children's reactions and taking leads from them in concept development is the teacher's most important and at the same time her most intriguing responsibility.

Occasionally we have the privilege of hearing a child "read" experiences and situations and express them in profound philosophy. A child was walking by a lake with her father. She threw a stone into the water and lingered to watch. She hurried to catch up with her father and eagerly shared her experience, "I threw a stone into the water, and it smiled back at me." In these troubled times we wish we might use her philosophy on the sones being cast into our lives. Perhaps if we wait patiently it can happen.

ADJUSTMENT OF THE PHYSICALLY HANDICAPPED

Willard B. Hargrave, Executive Director, Auricular Foundation, Inc.

Orientation of the individual child to unfamiliar conditions of a progressing educational program in order that he may fit into the routine and thus find his proper place, is a function of the school system. This orientation is accomplished with the average child by ordinary rules as he gains an harmonious adjustment to conditions and learns to live in peace with himself and others.

Orientation presupposes that the child has all the attributes of a healthy body, an adaptable mentality, and a complete set of properly functioning sensory faculties which permit him to fit into the composite pattern of school routine and community life. The requirements are supposedly all present and nothing lacking. His adaptation requires no special adjustment.

The exceptional child, however, whether superior or sub-normal for any number of reasons, may be quite unable to adapt himself by ordinary routine. His exception to normal patterns prevents the inter-weaving of his particular abnormal or sub-normality into the tapestry of the school curriculum without exceptional technic. His problem, therefore, is more than one of orientation: it is one of adjustment. The degree of adjustment necessary for conformance to the normal may be slight or it may be extremely great. It may be possible to confuse an unassisted maladjustment with a refusal to adapt through lack of knowledge of the cause of the maladjustment.

Physiological factors predominate among the reasons for an inability of many children to adjust themselves to the routine of class room procedure. When these causes have become recognized, and special teaching technic is followed, the adjustment is a simple matter and adaptation to routine is readily accomplished.

Theoretically a well developed teaching technic should be adaptable to the varying degrees of efficiency of pupils to assimilate the subject matter being taught. In reality this does not always work. The child may be able to adapt himself to one particular phase of the curriculum and be entirely unable to adjust himself to another. It would be assumed that if a child can do exceptional work in arithmetic, an inability to read properly indicates some reason other than mental deficiency. His poor reading has shown an inability to adapt himself to the reading process.

This would lead to one of two conclusions: either the method of teaching reading is not adaptable to that particular child because of some physiological or sensory factor, or he was not grounded in the fundamentals of reading.

The line of correct investigation into the cause or causes of the need for remedial reading is a simple one. Reading involves two sensory

faculties: sight and hearing. It becomes readily understandable why a child fails at reading if he is called upon to learn printed symbols which he has difficulty seeing. This is particularly true if he is being taught by the look and say method as reported by Paul Fendrick in Visual Characteristics of Poor Readers. Conversely, the child with a hearing defect may have difficulty in learning reading when taught by the phonetic method.

Guy Bond, in his The Auditory and Speech Characteristi s of Poor Readers, had found an unusually large percentage of defective hearers among children in remedial reading classes. Among those from schools teaching phonetics, 63% were found to have a loss of hearing of at least 15% in the better ear, and but 10% of those from schools teaching with the look-and-say method had such a loss.

Inasmuch as a hearing loss must be estimated in weighted values of disability for speech, the question of percentages can be settled only by taking these values into consideration and evaluating them accordingly. If we change Bond's estimates of important hearing loss from over 15% to include those of lesser degree which are still disabling, our findings are not comparable to the same extent.

It is extremely doubtful if Bond's percentages of loss of hearing in the better ear could be found in any public school system by modern audiometric technic. This error, then, brings into question the entire findings of this report.

The conclusion is correct, however, that the need for remedial reading was because of their auditory defects which prevented their adaptation to the type of reading method taught in their school. By correcting the technic the children were able to adapt themselves.

It is recognized that a sensory defect is more often than not compensated for by an acute sensitivity of another sense. Most people are aware of the ability of the totally blind to move about at will, finding door-ways, turning aside from obstructing walls, and otherwise demonstrating an awareness of their surroundings. This has been shown to be an extreme sensitivity of hearing which enables the blind to actually hear the echo or lack of echo of a wall or an open door.

As proof of this is a highly stimulated sense of hearing, it has been scientifically demonstrated that when the ears are blocked, the blind cannot prevent themselves from bumping into walls, nor can they find doorways without groping, just as a sighted person would if he tried to orient himself with closed eyes.

And yet a precise audiometric test will show that the blind have no better hearing, and in many instances less acute hearing, than the average sighted individual. They have simply learned to use the hearing they

have to perform a function which few normal hearers or normal visioned people even suspect is possible.

In other words the blind have adjusted themselves to a condition to which they would seemingly be unadaptable.

This adjustment, which permits adaptation to the routine, paradoxically reaches its maximum of value under expert guidance. And conversely adjustment is prevented by interference. Compensatory adjustment is a natural result of physiological or sensory deficiency which may be assisted or prevented from development according to prevailing stimuli.

Thus it should be evident that an understanding of the results of a particular deficiency, both as to therapeutics and possible prevention, is within the scope of the responsibility of the teacher, parent, or other person having the welfare of the child with such a deficiency at heart.

The natural aptitude of the human mind toward orientation to meet conditions as they are, brooks no interference lest there be deleterious results. Psychologists are agreed as to the turning inward of the perspective on the part of the handicapped. This tendency develops in various degrees according to the prevailing type in the first place, and in proportion to the surrounding favorable or unfavorable conditions. Where there had been a total lack of introspectiveness, the result of even unfavorable conditions might not be serious, but had there been too much introspectiveness the superimposed neuroticism might be extremely dangerous under unfavorable stimulation and tend toward complete anti-social conduct.

Inherent variations from the average, such as left-handedness, are no longer interfered with by those who have a knowledge of the results of enforced change. Psychiatrists have become aware of the danger which lies ahead for those who are compelled to use their right hand in order to conform to the average. In seeking to force an adaptation to right-handed writing by adjustment, the adjustment process often succeeds only in developing a maladjustment.

The peculiar technic of the left-handed in writing is largely self-developed. There is little in the ordinary teaching of penmanship which can be demonstrated to the left-handed, yet they frequently become penmen of skill and with a rare beauty of style. They have adapted themselves to a normal process in their own unorthodox way.

This is somewhat the result of sensory defects in reading. Forced to continue a method which does not permit use of a compensatory better developed sensory faculty, the results are frequently unsatisfactory and detrimental to progress. If left to themselves and their own inclinations, defective hearers often become avid silent readers, compensating

for the disadvantages of conversational entertainment. The blind or partial-seeing, denied the delights of the printed page, frequently develop exceptional skill as conversationalists.

Therein is a clue to further advancement in the art of teaching children with physical defects.

It might be supposed that, inasmuch as deafened children have much trouble with reading if taught by phonetics, they should be taught exclusively by the look-and-say method. It might also be supposed that the partly-seeing should be taught exclusively by the phonetics method. If that were true then the solution would be the simple matter of identifying such defects by precise examinations and designating the teaching method accordingly. But it does not appear to be the solution.

Unlike the left-handed, the defectives of hearing and vision -- other than the blind and the deaf -- are not divergences from normal, but are unable to assimilate normal technic in the expected routine manner because of weakened faculties required for such technic. If conditions can be changed, which will permit full use of the weakened faculty, then normal adaptation will follow.

Educators have recognized this fact regarding the partial-seeing by establishment of sight-saving classes, where printed matter is of large type. In some schools those with hearing defects are given instruction periods during which hearing aids are used. Some restrict supplemental instruction for the hard-of-hearing to speech reading. Both methods show results much more favorable than when they are not used. By being able to see the larger type the vision defectives are able to adapt themselves to the routine of learning reading. The printed word has been adjusted to the weakened vision. Through amplification of the hearing aid, instruction is adjusted to the weakened sense of hearing.

Under such conditions orientation is simplified. Maladjustment is prevented. Inasmuch as the burden was not placed on the child to make his own adjustment but had it made for him, his adaptation then followed the general routine.

All this, again, presupposes that the cause of the reading difficulty is recognized for what it is. There may be a number of reasons why a child cannot read well, but in the majority of cases it will be but one cause. It therefore becomes of paramount importance that the tools of learning be carefully examined for sharpness or dullness. Tests of the acuity of sight and hearing are indicated by poor reading ability, and when any defect is found it should be thoroughly studied in light of modern audiological findings as to the extent of its handicapping qualities.

The demonstrable fact that defects of eye and ear retard a child's educational development is the most clear cut argument that any neglect in early detection is inimical to the educational welfare of all children

who presently have undetected defects. It also stands as an indisputable argument that causes of retardation, if unidentified as sensory, may be classified as something else, and are of course erroneous. And if erroneous, any means for correction would accomplish little. It would be comparable to seeking the cause of bad lighting in a room. It would prove of little worth to brighten the furnishings in order to reflect more light if the windows were obscured by dark shades. Raising the shades would be the sensible thing to do first.

The principal difficulty of the past, as it relates to the many thousands of children in public schools whose defective hearing is yet not known and thus not properly considered, is the lack of adequate audiometric testing facilities. Such programs as have been conducted were in many instances in the hands of untrained people. There is no function of the human body more complex, nor more readily misunderstood, than the sense of hearing, which deals with sound, another complex subject. Yet many people are of the misguided opinion that there is nothing to audiometry. Admittedly there is little to learn regarding the actual mechanics of operating and testing with an audiometer. Two or three dials, a button or two, and a technician is born. But the evaluation of results involves the physics of sound, mechanics of hearing, child psychology, and in the event a genuine defective is found, at least a bit of the psychology of deafness. They are all summed up in audiology, the science of hearing.

Certainly it cannot be supposed that a function of the human mind, related to all these kindred subjects, can be a simple matter of the mechanism of dial turning and a few marks on a card called an audiogram.

It goes much further than the simple detecting of defects. Only through audiometry and audiology is it possible properly and correctly to estimate the degree of the handicap in the educational process, to understand fully the limitations of the child, acousticly speaking, to any spoken instruction, or to visualize the importance of good hearing in learning to read symbols which are largely but pictured phonetic sounds.

Sight and hearing are tools for learning. Many children have dull tools. In most cases there are means whereby these tools can be made sharper by understanding and thus a better utilization. It is not expected that a child with a recognized defect do the impossible, but we often demand the impossible of the defective child. Only when the physical or sensory defect is known, understood, and assisted, is it possible for the child to adjust himself and become oriented to those conditions which make for a normal learning process.

Auditory defects frequently remain undetected because they are hidden, and because they cannot be seen they continue undetected, with their detrimental results an ever present challenge to the teacher that something is wrong.

No teacher desires a failure in her room, and evidences the fact by seeking ways and means to develop or perfect her teaching technic. The growing realization that we have too long taken an indifferent if not contemptuous attitude toward hearing of school children is beginning to be felt in educational circles.

Results will be far-reaching when we are as universally concerned with the accurate interpretation of any auditory deficiency as we are with the intelligence quotient of our children.

HEARING AIDS AND THEIR ADAPTIBILITY TO YOUNG PEOPLE

Charles Hunsburger, Vacolite Distributor, Pasadena

A great many technical problems have had to be overcome to produce the modern hearing aid, and exhausting studies had to be made in the field of sound production. Without entering into any technical discussion I would like to mention just a few facts along this line.

Sounds may be classified into three general groups: noise, music, and speech. Noise is thought of as an unwanted sound. It is usually a sound to which no definite pitch can be assigned. All sounds are made up of combinations of different tones spread throughout a wide range of pitch and intensity.

Noise, while it usually has no definite pitch, is a complex mixture of various tones. For this reason, it is usually impossible to eliminate the effects of noise (at the listneer's ear) and still be able to understand and enjoy speech or music, since eliminating noise would in most cases eliminate the necessary components of speech and music. It has been found, however, that by eliminating certain bands of frequencies, the distracting effects of many unwanted noises can be reduced and the masking which they produce on the other tones essential for speech considerably lessened.

The most important characteristics of music are: frequency, or the number of vibrations per second of the musical sound; intensity, which is measured by the amount of energy of the sound; and tone structure, which is determined by the overtones or harmonics present in the sound. Musical sounds usually are complex mixtures of various frequencies, such as a fundamental, and certain overtones. It is largely the overtones which distinguish between various sounds emitted by different instruments when the same note is played. Faithful reproduction of music requires the transmission of a broad range of frequencies and intensities.

The sounds of speech are composed of combinations of different tones. The vowel sounds embrace a range of approximately 350 to 2500 cycles per second. Consonants consist mainly of high frequency tones extending from 1000 to 4000 cycles per second and beyond. Each sound of speech is characterized by certain groups of frequencies, and unless these groups are present in the proper proportions, the speech will not be intelligible no matter how loud it may be. Thus for good intelligibility, it is necessary to amplify all of the frequencies from approximately 350 to 4000 cycles per second in their correct proportions.

The function of the hearing aid is to amplify those bands of frequencies which are essential to the individual's understanding of speech. In order to fit a hearing aid to the individual, it is essential to know just what sounds of speech he hears, and what sounds he does not hear. One method of determining this is by means of an audiometer. Properly interpreted, the results of an audiometer test are extremely useful. Unfortunately, it is not possible in all cases to rely entirely on the audiometer as an infallible instrument to be used in the prescribing and fitting of a hearing aid.

Partial loss of hearing occurs in various forms. No two people with the same type of partial deafness will suffer exactly the same hearing loss in each frequency. Some hard of hearing persons hear low frequencies well, but

do not hear high frequencies so well. They hear sounds but do not understand the words, because the frequencies necessary for intelligibility are lacking. A few persons hear high frequencies better than low frequencies. Their difficulty is less, because the lack of low frequencies does not so greatly reduce the articulation. The problem has been to select a hearing aid which will amplify those frequencies which the user needs in his particular case, in order to provide good intelligibility. Since each individual's hearing loss is different, the hearing aid must be adaptable to all varying requirements.

How to design a hearing aid to meet these requirements has been the stumbling block of hearing aid manufacturers. In addition to providing the correct frequency response for the individual, it is necessary that the other requirements of a good hearing aid also be present. That is, it must have sufficient acoustical gain to pick up and amplify the sounds, it must be capable of producing the required acoustical output, and it must have low harmonic distortion.

Various attempts to provide the correct frequency response were made by substituting component parts of different fundamental pitch. The number of component parts which could be used was necessarily limited, and sharply resonant components covering a narrow range were used. The results were far from satisfactory, but the method was used because there appeared to be no other method.

The Vacolite Company of Dallas never subscribed to the above-mentioned method. A new way was thought out, and since new and useful inventions are patentable the Vacolite system of frequency control is patented and available only in Vacolite instruments.

Some frequencies are more important for the understanding of speech than others. The lower frequencies of speech furnish the greater part of the acoustic energy. The higher frequencies of speech furnish the greater part of the intelligibility. Syllables are made by varying not only the vowel sound which consists largely of low frequency tones, but also by the manner of starting and stopping the characteristic vowel sound. Roughly speaking, the transition to or from a vowel sound can be classified as a consonant. These consonants consist mainly of high frequency sounds and enable one to distinguish between words containing the same fundamental vowel sound.

In order to determine the relative importance of various frequencies in the recognition of speech, many tests have been carried out, using selected portions of the total frequency band of speech. The results of these tests show that while most of the energy is contained in the region below 500 cycles per second, the frequencies above 500 cycles are the important ones for the understanding of speech. This energy is shown to be 60% in sounds below 500 cycles and 40% in sounds above 500 cycles. It has further been found that articulation or intelligibility of sound is primarily obtained in sounds above 500 cycles, actually 95%, and only 5% in the sounds below 500 cycles. Thus it is apparent that intelligibility is almost entirely obtained in the field where only 40% of sound energy prevails, leaving 60% of sound energy to produce mostly noise sounds.

Unless the hearing loss is uniform throughout the frequency range, it is

necessary to utilize frequency selective amplification which is Vacolite's patented system. Even though the hearing loss is uniform, it is advantageous in many cases to use the proper type of selective amplification. If selective amplification is not used, then the frequencies to which the individual is not hard of hearing will be amplified together with those to which he is hard of hearing. The relative proportions of the various frequencies comprising the sound will then be wrong, with the result that some of the frequencies will become so loud as to be annoying, or even become painful before the other frequencies are sufficiently loud to indicate the characteristics of the speech sounds. If the areas representing the speech sounds are amplified uniformly, the vowel sounds strike the upper limit long before the consonants. Thus the listener is subjected to a constant barrage of loud vowel sounds which tend to mask the weaker consonant sounds which are essential for intelligibility.

Methods of fitting a hearing aid which comprise selecting one of three (commonly available) characteristics by a listening test are not adequate, because the patient is accustomed to hearing sounds as they are rendered through a defective hearing organism. Thus, when he selects an instrument by trial, he tends to choose the instrument which makes sounds seem similar to those he is accustomed to hearing, and, as a result, he chooses an instrument which exaggerates his impairment still more.

The most reliable method of testing the distinctness of speech is by means of an articulation or word test. Words are called at a fixed distance (preferably three feet) and a record made of the number of words received correctly. This test may be made first without the hearing aid, and then with the instrument, thus affording a reliable check on the ability of the instrument to help the user.

From the results of the word test it is possible to determine what components of speech the hard of hearing individual is missing; then it is possible to adjust the frequency control, as used in Vacolite aids, so that the patient obtains the best results.

We have shown that for intelligibility the high frequencies are necessary, and that low frequencies are not so important. The Vacolite frequency amplification control is continuously variable, thus giving not only three distinct characteristics as provided by most other aids, but an unlimited variation to conform to the exact requirements of the case. The low frequencies may be controlled to almost infinitesimal amounts, while at the same time the high frequencies are retained or actually increased. When the control is adjusted in accordance with the findings of the audiometer check, and the word test, the result is very high intelligibility and low fatigue. This controlled frequency response is obtained without the interchanging of any component parts, and can be instantly adjusted at any future time should this become necessary due to a change in the individual's hearing loss.

As to the adaptability of this modern hearing aid to young people and children of school-age, there is a natural tendency still prevailing among younger people to hide any evidence of hearing impairment. We know from numerous surveys that an astounding number of school children have some hearing impairment. We know from numerous surveys that an astounding number of school children have some hearing impairment. We also know that if they are examined frequently for hearing ability, and are found at an early age to be

deficient, they can be referred to proper and qualified physicians who can prescribe treatment which will in the larger percentage of cases correct the difficulty. The best results have been obtained up to the age of fourteen, after which age the percentage of success drops rapidly. In adult cases the treatment very seldom produces results.

Many quite young children now wear hearing aids with such good results that they are enabled to attend regular classes with their associates. These children will hardly ever become conscious of any impairment to separate them from their regular companions with normal hearing, and as they enter business life they will be totally unconscious of any handicap.

In instances of so called "total deafness" or those who are deaf mutes there is very often a good possibility of educating the patient to hear and talk. In the first place the probability of total deafness is exceedingly remote. Mr. Hargrave here, and all who have had experience along this line, will bear me out in the statement that almost invariably there is some spark of hearing which can be reached. The Auricular Foundation, of which Mr. Hargrave is the head, is a most well equipped laboratory for the re-habilitation of these cases. Some public schools now have classes for these extreme cases. In Pasadena, Mrs. Davies has a fine class equipped with modern group hearing aids, and her results have been highly gratifying. These individuals require expert attention and training, and during the first year or two they should be allowed to use a hearing aid only under such supervision. Later, when they have acquired a sound vocabulary, although it may be limited to only three or four hundred words, they can wear an aid regularly to very great advantage. All such cases require expert fitting, and only the most modern instrument with variable frequency control should be prescribed.

THE OLD MEN OF THE DESERT

Jean Jacques, Editor, Western Trailer Life

> "And we marched forth and came to
> the land of Joshua, which was in the
> borders west of the seashore." Ch.2; V.6;
> Book of Mormon.

The Joshua tree (Yucca brevifolia) is probably the strangest plant native to the United States. It is a grotesque growth, weirdly picturesque, a never ending source of interest and wonder to the desert traveller. It has been described with impartial enthusiasm from the days of the earliest advent of the white man in California and Mexico.

The Joshuas are generally accepted as dating back to the Tertiary period. Science, being always reluctant to be specific in the matter of reckoning time to assist mere man in focusing a clear picture on his mental screen, we must be content to place the origin of the Joshua as some time in the Age of Animals. Roughly, more than a few millions years ago.

Regardless of the exact time of the origin of the Joshua, it has lived and prospered in the deserts of our southwest over a longer period of time, and with fewer structural changes, than any other form of desert plant life.

We know definitely that the Joshua flourished as a contemporary of many animals now extinct, notably the giant ground sloth. Remnants of the Joshua were found in the preserved droppings of this sloth in Gypsum Cave, Nevada, by M. R. Harrington of the Southwest Museum, Los Angeles.

When the Joshua was first seen by early travellers it was referred to as a "palm" or "yucca palm." Scientific examination revealed it is not a "palm," but a lily, a sturdy, almost indestructible lily, capable of withstanding the potent, ultra-violet rays of the desert's unscreened, summer sun and the freezing cold of the desert's winter.

Members of the Church of the Latter Day Saints (Mormons), passing through the desert enroute from the west coast to their land of Canaan in the Salt Lake valley after a trip around the Horn, were so impressed by the rugged strength of these plants that they accepted them as divine symbols and called them Joshua trees after the Biblical leader of that name.

The Joshua ranges in habitat from the northwesterly end of the Mojave desert south and southeastward into Mexico and, in fewer numbers, into Central America. The area most heavily populated with the Joshua is the Little San Bernardino mountains in southern California.

Yucca Valley, enroute to Twentynine Palms over the Twentynine Palms highway, is a veritable forest of Joshuas. South of the picturesque desert town of Twentynine Palms, 50 miles east of Whitewater on U. S. Highway 99, the plant is honored by the United States government in the naming of the Joshua Tree National Monument, an 826,970 acre area in the Little San Bernardino mountains. The Monument lies partly in San Bernardino and partly in Riverside counties.

Through the countless centuries the Joshuas have developed a hardihood which insures their existance. They have no natural enemies for they offer nothing as an attraction. Their tough, fibrous trunks and leaves withstand, as we have seen, scorching heat and freezing cold. Life is maintained and death restrained by the plant's root system. A single long root -- it would be called a tap root were there others -- penetrates deeply into the earth. As it grows downward seeking water and nourishment, it forms a rigid anchor which enables the plant to defy destruction from the periodic, heavy winds of the high, open areas of the desert ranges.

The root system of the Joshua is responsible for the laborious effort required when man attempts to transplant it. Even the youngest Joshua offers seemingly unreasonable resistance to interference. Unless the complete root down to its extreme, thread-like tip is carefully removed the chance of successfully transplanting it is slender.

The Joshua depends for reproduction upon the yucca moth (Pronuba yuccasella). Without this moth, the Joshua (all yuccas, in fact) would be no more. Conversely, without the yuccas, the moth would become extinct.

Let us intimately trace the life progress of a Joshua: The Joshua first makes its appearance as a small bunch of short, stiff and sword-like leaves. These increase in number along a stubby trunk. The trunk is thatched by the dead leaves, completely shielding it from any enemy which might be tempted to attack it during its tender years.

The young Joshua progresses upward on a straight trunk, a deceptive beginning, considering its ultimately unrestrained and seeminly heedless branching. As it grows, as the fibers of its trunk harden and become less and less inviting to would-be attackers, the dead leaves fall to the ground. Eventually, the trunk becomes bare and the plant begins an attempt to justify itself as a tree.

When the Joshua is from six to ten feet high -- it is then from eight to twelve years old -- its first flowers appear. Where flowers form ultimately will appear the branches.

Budding usually begins in March. The flowers are not as impressive as those of other yuccas and they have a decidedly unpleasant odor in contrast to their first cousins, the lilies. But, apparently, the fetid odor of the Joshua is rare perfume to the yucca moth. Mrs. Yuccasella rolls together a ball of pollen from one flower, flies to another, deposits four or five eggs in the ovary of the flower and inserts the ball of pollen.

The flight of Mrs. Yuccasella and the deposit of her eggs and the pollen accomplish a dual purpose. She has assured fertilization for the Joshua seeds and food for her own offspring.

The larvae which hatch from the eggs of the moth feed on the Joshua seed. About twenty seeds are required to mature each larva. As there are some 200 seeds in a Joshua pod, approximately 100 are left intact to insure the future of the species. The seed pods seldom open while attached to the plant, but fall to the ground where they depend upon the pounding of the desert winds to

break the hard casing and release the shiny, black seeds.

Joshuas live to a venerable age. This, coupled with the grotesque shapes of their branches, reminiscent of old men deformed by the rheumatic pains of age, has earned them the colloquial title of The Old Men of the Desert.

Once mature, the number of the Joshua branches is seemingly unlimited, though older branches often break off leaving stumps which add to the grotesque appearance of the plants.

In the Joshua Tree National Monument are hundreds of Joshuas taller than twenty feet. Today's reigning monarch, so far as is known, is slightly under forty feet. The giant of all Joshuas -- sixty-five feet -- held towering dominion near Palmdale in the Mojave until 1936. Then, weakened by the over-attention of souvenir hunters, it fell before one of the heavy winds common to that area.

There are two species of tree yuccas, the Joshua tree and the Mojave yucca (Yucca mohavensis), on the Pacific coast. The Mojave was confused with the Joshua until about 1900, when plant observers re-classified it. The Mojave does not branch as freely as the Joshua and seldom exceeds twelve feet in height. Its leaves are longer than those of the Joshua. While not as sturdy as the Joshua it still manages to cling to life for a few hundred years.

Commercially, none of the yuccas has much value, though they were used more or less extensively by early ranchers in the building of corrals and crude shelters. An attempt was once made to manufacture paper from the pulp of the Joshua, but the resultant product was so poor that business did not endure.

The wood of the Joshua, though exceptionally light and soft, is surprisingly tough, due to the maze of fibers that compose it. When green, it is practically impossible to burn; dried, it becomes rock-hard and will take a polish similar to that produced on anthracite. Desert folk referred to the dried Joshua as "petrified."

It is a strange plant, the Joshua tree -- strange and weird and grotesque and ancient, well deserving the not uncomplimentary tittle, the Old Man of the Desert.

SELECTING INSTRUCTIONAL MATERIALS

Virginia Belle Lowers, University High School, Los Angeles

Selecting instructional materials for a class is an important problem. It is never settled finally. Life presents so changing a scene that in order to utilize student interest to the utmost, we are tempted, sometimes even obliged, to change our materials as the world wags. Given a teacher with an expert knowledge of methods, who has analyzed her class -- their level of understanding, their interests, their needs -- and who has worked up in them a desire to further their knowledge or abilities, she must have materials for use which will meet exactly that situation, or which can be adapted to it. If the material is too childish, interest flags; if it is too ephemeral, interest droops; if it is too difficult, interest dies. Two other aspects of the situation are ever present. One, all the members of the class are not alike in their needs and interests. Two, are there not certain great masterpieces, treasures of our culture, basic to our very way of living, which should become the possession of every young citizen of this republic? Faced with these difficulties, resourceful teachers have evolved a number of solutions, or modi vivendi, at least.

For one thing, the textbook, once king of the classroom, the mainstay of teachers, the abomination of students, has undergone some revolutionary changes. The textbook has become attractive -- like a magazine, almost; it has condescended to use contemporary material; it has become merely a reference book in some cases; it has even become an article of reproach. "The textbook teacher" is sometimes used as an epithet meaning an instructor who could do nothing without her "Bible," in which she assigns pages 25 to 50 inclusive, or whatever, from day to day. Personally, I don't think such a teacher exists. Nor can anyone deny that a good textbook not only cuts down the time-of-preparation overhead for the driven teacher, but affords the pupils the deep satisfaction of a real body of knowledge to learn, with a sense of achievement at having finished it. Supplemented with pamphlets, periodicals, pictures, recordings, and "supplementary texts," the basic textbook can provide a nucleus for a full and interesting body of knowledge.

Lest it be thought that the foregoing emphasis on pupil interest infers that pupils should do only that which interest them, I hasten to deny the implication. But every teacher knows that interests make a very good approach to any study, especially that of reading. Those of us who are good readers read in the first place because we were interested in something -- in funny papers, in fairy tales, in adventure stories, in mystery, romance, or the secret of the complexions of our favorite movie actresses. Students can even become interested in doing something that is intrinsically difficult for them. Often in arousing a desire in the class for improving their reading ability, I have each one fill out an Interest Inventory. There is one in Witty and Kopel's book, Improvement of Reading in the Secondary Schools, that has proved very useful. An interview with each student, using his interest inventory as a guide, gives the teacher a closer insight into his particular reading problem and motivates his own desire to succeed in solving it.

Then the teacher will have an idea whether to start out with Sea Adventure* by McFarland for tenth grade students, or Rewards by Herzberg, Paine and Works, or Champions, by Persing and Leary, or the Bronze Book by Roberts, et al.

Perhaps some absorbing current event or school problem will lead the teacher to begin with something in the Reader's Digest, or the Scholastic, or even Everyday Reading, which is often more literary. All of these books and magazines have reading tests attached, and suggested exercises for vocabulary improvement, increased comprehension, and the like. In the case of the periodicals, especially, it is desirable, even necessary, that each student have a copy. Sometimes the school library may have a set available, sometimes the students themselves, in these fat days, may subscribe for them. But everyone must have a copy, unless you are that marvel among teachers who can teach a class of forty in divisions of five or ten, each segment doing something different. Such an arrangement often works well for fast readers, but slow readers are timid and like to feel part of one big group,all working on the same thing, except for free reading.

Now you may say, "Knowing your class is all very well, but suppose the only reading material in the textbook room simply won't fit that class?" In that case, I can only suggest that you use periodicals, pamphlets, selected magazine articles, borrowed books, until you can get the text which will really start the class on the ladder to raise their level of reading ability. The problem still remains: how to choose a textbook that will be of real use to many classes for a number of years. We shall hand out lists of texts that have proved useful for one reason or another; some are on exhibit here; we shall ask you to evaluate some of them at the close of this hour. Meanwhile, I should like to describe to you how one large school system chooses its textbooks.

Los Angeles has a very democratic and forward-looking policy of replacing out-of-date titles, and of adopting new and more attractive editions of the good old stand-bys. The curriculum heads believe that

> "The rapid social and technical changes in our contemporary life and the constant changes and improvements in learning procedures warrant frequent new adoptions in most fields. Changes at least every five to eight years are desirable, and in some specialized fields even oftener. It is believed also that the new program requires an abundance of reading and classroom reference materials not the least of which might be found in the text and supplementary titles developed by teachers in situations with a revised curriculum, including teachers in our own schools."[1]

Adoption procedures work this way. All new studies of textbooks in any field -- tenth grade reading, eleventh grade social studies, tenth grade life science, books for slow readers, etc. -- are conducted by central committees of representative teachers selected by the assistant superintendents and the Secondary Curriculum Section. These teachers -- from seven to thirty in number -- meet and with the curriculum head work out a prospectus of what type of book they want. They describe the course of study, and all criteria and specifications. The curriculum head then drafts a letter which is sent to all the publishers telling them the names of the committee and the type of book they would be interested in reviewing with the purpose of adoption. The specifications mentioned include the format desired -- covers, type, page-form, binding, machine sewing and illustrations. If the illustrations for a book intended for slow readers of high school age are childish or include pictures of little children, the students will reject the book as babyish, even if their reading level is no higher than that of the youngsters pictures. The

pictures should be modern and an aid to teaching rather than merely decorative. Page form should be well designed with ample inner margin and sufficient outer margins to permit re-bindings. Binding should be in buckram, with reinforced cloth joints, and machine sewing through section folds.

Next, the letter to the publisher will mention the style of writing required. The style of writing should be simple, clear, forceful, well-adapted to students of the age and ability mentioned. For slow readers, the vocabulary should be simplified and especially the sentence form. Reverse order sentences or long, complex sentences make reading difficult for retarded students. The subject matter must be interesting to students of that age, no matter how poor their actual reading ability in fact is. Then should be mentioned additional desirable features, such as, in the case of a basic text, a complete and cross-referenced index, suitable teacher aids, questions for discussion, group projects, and fiction or magazine references. Follows a description of the course, with its units of study, as, for instance, adventure, mystery, science, or sea stories; or orientation subjects such as stories of articles stressing personality development and social relations, the school and its resources, safety education, radio and motion pictures, vocational guidance.

The publishers send copies of books to the curriculum department and to the committee members only, their representatives interview at their schools only those teachers on the committee, and make appointments to see them when they are not teaching. Two interviews are allowed, limited to not more than a total of one hour altogether, and are to take place on the school grounds. If a third interview is necessary to decide in elimination of some titles, it is limited to one-half hour. The representatives of the publishers receive from the Curriculum Section a card which they show the principal of the school when making the appointment with the teacher. Manuscripts may be considered, if they are received before the deadline set, also books written by Los Angeles teachers themselves.

The committee members then busy themselves studying all the books, sometimes even trying some out as well as they can. After several meetings for discussion, they vote on those they like best, copies of which will then be sent to all the schools for the individual teachers of the department interested to vote upon. On one such comittee upon which I served, every one of us, coming from entirely different sections of the city, agreed at once on our selection, after the careful perusals, which, in fact required us to read and think through almost every book. Moreover, when put to a vote by all the teachers of that subject in the entire city, our choice was confirmed. We all had selected the same books out of ten for the subject -- one for average to fast-moving students, one for the more retarded.

The results were then submitted to the Curriculum head, who drew up a report for the superintendent, who presented it to the Board of Education, who then adopted it as a matter of course. In the report submitted, the title, author, publisher, and price were of course mentioned, together with reasons for recommending its adoption. For the books rejected, the committee made out cards stating why the book was not chosen. All of this does not take so much time as you might think -- for the committee is allowed two or three months in the spring to consider a possible adoption for next fall, and if they are quite sure what they want and have made that clear to the

publishers, the desired text usually appears. Those not so good are quickly eliminated. This procedure, it seems to me, is also of benefit to the publishers, who may read, if they wish, why a book is rejected or adopted and therefore cause to be printed the books wanted. I append a sample form of textbook rating sheet.

Of course the teachers are satisfied, or perforce must be, because if the book should not turn out to be as usable as they thought, they have themselves to blame. So it all comes back to the knowledge of the experienced teacher. She must know her students' needs and by constant study and experiment, find out what material will meet those needs.

(For Committee Use Only)

TEXTBOOK RATING SHEET

Author.....Title.....

Publisher .....Date of Publication.....Price.....

	Superior	Good	Fair	Poor	
Utility of Material					
Appropriateness to Grade Level					
Organization					
Teaching Aids					
Format					

Order of Choice (1st, 2nd, 3rd Place, etc. Final Order of Choice

---

For Book of First Choice please give:

1. Brief description of book:

2. Reasons for recommending its adoption:

Name of School ....
Signature of Rating Teacher

(This is just one sample form. Each committee works out its own.)

BOARD OF EDUCATION
of the
City of Los Angeles

January 6, 1943

Gentlemen:

The following list indicates the fields in which textbook studies will be undertaken in the secondary schools of Los Angeles City during the first half of 1943, and the kinds of books to be studied in each field.

A copy of the revised textbook adoption procedures is enclosed with this letter. A few changes have been made in order to adjust to the current situation.

1. Commercial Education - (Dr. Jessie Graham, Supervisor, 876 Chamber of Commerce Bldg., Los Angeles, California).
   Clerical Practice: Textbook materials covering training for general office work: arithmetic, record keeping, business machines, office routine, and civil service.

   A8 and A9 General and Business Mathematics: Textbook materials representing the application of mathematics to business situations.

2. Foreign Language - (Mrs. Rose Stelter, Supervisor, Secondary Curriculum Office, 871 Chamber of Commerce Bldg., Los Angeles, California)
   Portuguese: Simple, introductory books for the Portuguese language including grammars and readers.

   Commercial Correspondence: Books in Spanish on commercial correspondence for third year Spanish students.

3. Home Economics - (Ellen J. Milligan, Ass't. Supervisor, 1205 West Pico Street, Los Angeles, California).
   Job Ethics: Up-to-date books on job ethics, induction into industry, etc., appropriate for high school girls about to seek employment.

4. Mathematics - (Mr. Dale Carpenter, Supervisor, Secondary Curriculum, 871 Chamber of Commerce Bldg., Los Angeles, California).
   Practical applied mathematics: Simple textbook suitable for ninth grade classes - emphasis on military, industrial and aviation problems.

   Basic Mathematics: A textbook on basic mathematics for senior high school suitable for use in grades 10, 11, and 12.

5. Music - (Louis Woodson Curtis, Supervisor, Music Section, 308 Sentous Center, 1205 West Pico Street, Los Angeles, California).
   Song books: Small, inexpensive collections of songs of foreign countries, especially of Mexico and South America.

6. Science - (Mr. Dale Carpenter, Supervisor, Secondary Curriculum 871 Chamber of Commerce Bldg., Los Angeles, California).
   Science of Aeronautics; A textbook adapted to students of average ability with average mathematical background.

7. Social Studies - (Mrs. Rose Stelter, Supervisor, Secondary Curriculum Office, 871 Chamber of Commerce Bldg., Los Angeles, California).
   Latin America, Canada, Australia, the Orient, and Africa: Basic and supplementary textbooks appropriate for ninth grade students.

   Geography: General geography textbook (not an economic geography) for use in grades 10-12. Emphasis on geography of the air-age desirable.

   War Information: Inexpensive materials on war information, particularly of a pre-induction nature.

The following calendar of tentative dates has been established as an aid to the work of all persons concerned with the textbook studies. Time is of the essence and samples of books thought suitable for consideration by committees should be sent immediately to the supervisor indicated or directly to the Curriculum Office.

Please send six copies of each title submitted for consideration.

CALENDAR FOR TEXTBOOK STUDY

January 11 - Announcement to Publishers of subject fields. Teacher textbook committees selected.

January 20 - Meeting of textbook committee members to discuss methods and plans and prepare criteria for studying books.

January 20 - March 5 - Evaluation of books. Final committee decision.

March 15 - Record to Superintendent.

March 18 - Approval of Board of Education.

March 22 - Annotated lists of all new titles prepared by Curriculum Office sent with Library and Textbook Section bulletin on textbook funds allotted to each school.

April 30 - Textbook requisition due from schools.

(Signed) Maurice G. Blair
Acting Director
Secondary Curriculum Section

Approved:
Arthur Gould
Deputy Superintendent

BOARD OF EDUCATION
of the
City of Los Angeles

January 22, 1943

Gentlemen:

Since our original letter to you of January 6th, on fields for textbook study for 1943, we have received information from the War Department on pre-induction training courses.

It may be desirable to develop further in existing classes or in some cases to establish new classes in the five fields of study covered in this War Department report:

Fundamentals of Electricity
Fundamentals of Machines
Fundamentals of Shopwork
Fundamentals of Radio
Fundamentals of Automotive Mechanics

To this end we are ready to examine any textbooks you are to submit which are appropriate in these courses.

Yours truly,

(Signed) Maurice G. Blair,
Acting Director
Secondary Curriculum Section

MGB;rt

VOCABULARY DEVELOPMENT IN ARITHMETIC

Theodora Mahan, General Supervisor, Ventura County Schools

Words are not only one of the principal means of communication, but they are the tools with which we do much of our thinking and in a sense are the very material out of which we make our thoughts.[1] If this is true it places a heavy responsibility upon those who are concerned with the education of children. As teachers in the public schools we are determining the thinking of future citizens through our efforts at vocabulary building.

An integral part of the teaching of reading in general education is that of vocabulary building. Without the background of experience to give meaning to the printed word symbol, little reading of the printed page can be done. Word calling does not constitute reading which is a highly complicated intellectual process. The quality of the reading act can be measured in terms of previous experiences and meanings that are brought to bear upon the printed symbols under consideration. Therefore, a primary concern of the teacher of reading is that of the development of an adequate meaningful vocabulary.

McKee[2] says that the two major tasks of the school in building a vocabulary are to provide, (1) opportunities through which children build concepts, understandings or meanings and become efficient in using spoken symbols of these concepts and, (2) training to equip children with the ability to identify words, phrases, and other printed symbols that are used to represent concepts or meaning.

Some of the ways, according to McKee, in which vocabulary can be developed in the elementary schoolare listed below:

1. Providing a curriculum that is increasingly enriched; that is, children have many desirable experiences.

2. Developing a program of oral language so that children exchange experiences as a means of gaining new concepts and meaning.

3. Providing opportunities to read much simple material; (simple in the sense that only a <u>few</u> strange concepts are included.)

4. Teaching in the fourth grade definitely and functionally the use of the dictionary as an aid to the acquisition of meaning.

5. Considering the need for preparing the child to read materials in special subject-matter fields.

6. Discussing terms in connection with teaching in a given field so that emphasis can be made on the clarification of meaning and the removal of misconceptions.

7. Constructing materials for informal reading activities by children and teacher on the basis of familiar experiences.

In the list above cognizance of the vocabulary needs of special subjects

---

1. Hart, Archibald. Twelve Ways to Build a Vocabulary, Dutton, N.Y., 1939.
2. National Society for the Study of Education. The Teaching of Reading. 36th Yearbook. Taken from chap. on "Vocabulary Development" by McKee.

in the curriculum is given. But classroom procedures in content subject fields does not indicate this same recognition of special needs. A lack of awareness or concern for building vocabulary in the special fields by teachers generally, is a contributing factor to the difficulty children face in some fields, as in science or mathematics.

> "It must...be the task of every teacher to develop in students the abilities and skills essential to proficiency in reading and to help them in dealing with the special problems that arise in ..(a)..particular field. Teachers must know what abilities and skills are essential, how they function in literature, mathematics and other fields, what special problems may complicate their use in each field and how students may be helped to cope with them."[1]

The particular purpose of this paper is to indicate the vocabulary needs in relation to arithmetic of children in the elementary school. These needs make themselves apparent in the primary grades as children begin to express quantitative ideas and continue on at varying rates throughout life, though growth in the quantitative elements of the vocabulary must be gradual and thorough.

Arithmetic has its own vocabulary and set of experiences, and meanings must not be taken for granted. The difficulties encountered by children in arithmetic result from a lack of adequate experience with units of measure and terminology. This vocabulary consists of useful terms which designate quantitative ideas such as simple comparisons, other general terms as average, sum, normal, total, and a meaningful vocabulary of quantitative terms and knowledges about arithmetical practices utilized in business, economic, social and industrial affairs.

There are definite vocabulary needs relative to the various arithmetical processes as developed in the elementary school. The vocabulary involved in the expression of the concept of division is rather long and complicated. The same is true of multiplication. By skillful planning the teacher can foresee concept needs in time to develop from familiar understandings the new concepts involved in these processes.

The vocabulary needs are determined to a great extent by grade placement but a gradual developmental and maintenance program is essential to the adequate development for the needs of each level. Primary children must have experiences that will give meaning to comparisons, simple measure, and a feeling for number before some of the basic processes in arithmetic can be intelligently developed and understood. Each process builds upon previously developed concepts.

What are the characteristics that contribute to difficulty in developing the peculiar service vocabulary in arithmetic? There are several but one that is apparent in much of the teaching in the field of arithmetic is that of the remoteness from child interests. While children are natively interested and concerned with quantitative thinking they are not vitally impelled to consider them isolated and removed from their immediate experience. The gathering of walnuts by quarts is of no interest to a child who knows that they

---

1. Gray, Wm. S. Reading in General Education. Amer. Council on Educ.,Wash., D.C., 1940.

are picked by the sack. The citrus industry of Florida is not a good medium for the development of meaning for children living in an orange orchard in California. The introduction of the knot as a measurement because it utilizes certain figure combinations is not a legitimate reason for including it. Meaning must be developed through those activities that are immediate and of interest to the child and that involve the handling of familiar materials.

Another difficulty encountered is that of trying to develop abstract ideas, which have not been preceded by concrete experiences. In the primary grades much manipulation of concrete objects gives a basis for the transition into the abstractness of figures and words that stand for them. This all involves carefull planning so that the transition may be made from the concrete into abstract thinking without confusion and misconception.

Still another factor is that words used in arithmetic often have had previous meaning. For instance "times" as an arithmetical concept of multiplying has had previous connection with the child in taking turns, etc. Teachers must be alert to the great need for clarification of meaning for certain words perhaps already familiar but new in the quantitative sense.

All of the above-mentioned factors that contribute to the difficulty of attaining the required vocabulary also operate in the matter of problem solving plus the fact that many times difficult arithmetical operations are cleverly concealed beneath the impenetrable cloak of words having little or no meaning for the child attempting to solve the problem. Problem solving at its simplest, is a complex, involved process. Experience must shed light to help the child visualize the problem: hence the composition of the statement must be carefully considered as to its relation to child interests. Even then, children should be taught to read for specific purposes as, "What is wanted" and "Name of the answer." More time spent with building understandings results in reading with richer meaning and scope.[1]

In the consideration of the vocabulary peculiar to the present state text-books in arithmetic, The Child Life Series, one is appalled at its length. Just the accurate development of meaning for all words peculiar to arithmetic presented therein amounts to a major task in teaching. Basic concepts are expressed in terms of printed symbols so that vocabulary and concept are very closely related and one cannot be taught without the other. When one considers the required understandings needed for a third grader in the use of the state text-book for that grade it is immediately apparent that the first two years are better spent in developing accurate meanings than in memorizing meaningless isolated number combinations. The program in numbers for the first two grades though incidental in nature is <u>not</u> accidental in content.

A thorough survey of the special vocabulary peculiar to arithmetic presented in the state series indicated a total of over 600 words. By grades the totals were:

---

1. DePencier, Ida Brevad. Types of Guidance in Reading for Different Purposes in the University Elementary School. Monograph, Reading and Pupil Development, University of Chicago, October, 1940.

169589

Third 134
Fourth 123
Fifth 70
Sixth 67
Seventh 119
Eighth 112

One can see the necessity for serious consideration of the problem of developing accurate meanings for these essential words in each grade, and the problem of the child with an inadequate background trying to understand the text. For effective work on the part of the student this vocabulary must be maintained after it is developed so the problem is not only how to develop it in the first place, but how to maintain it as a useful and active part of the child's spoken and reading vocabulary.

The kinds of words used in the texts range from those of simple comparison which contribute to the interest of basic quantitative concepts in the primary grades to those highly specialized terms peculiar to business practices in the eighth grade. There are the terms needed in connection with each arithmetical process, the vocabulary of measurement, words for numbers, moneys, graphs and diagrams, and geometric figures. In addition to all of these there is a rather large group of miscellaneous terms and symbols included in the five textbooks.

The method of presentation and the development of this vocabulary varies. At times new words or concepts are carefully presented the first time they appear. At other times they are casually introduced in a familiar setting with no word of explanation. Then later in the same text, or perhaps in the next grade, a special emphasis is given to the word and the idea for which it stands. Still other words constituting the arithmetical vocabulary seem to be assumed to have been taught in some other place and are never considered in the text as needing any interpretation. In checking the terms in the third grade book it was found that eight words were adequately introduced, while thirty-six terms or words were given little or no explanation.

There seems to be little conscious planning for furthering growth in meanings through repetition as a part of the program of maintenance. Apparently it is assumed that continued usage in daily activities will be all that is necessary. Occasionally a brief review involves considerable material that assumes that a meaningful vocabulary has been acquired but no suggestions are given either to pupil or teacher for taking care of these deficiencies as may be apparent from such a test.

The following recommendations, based on the earlier discussed research showing how vocabulary needs may be met are suggested to teachers for the development of this large vocabulary peculiar to arithmetic. They have been carefully considered and seem to have merit for more effective teaching.

1. Every necessary word in the special vocabulary of arithmetic should be learned through use; mere memorization of a definition does not develop understanding of a concept. Teachers must then provide and allow for experiences by which each term may become a part of the understanding of the child.

COLLEGE LIBRARY

2. Much more time must be spent in discussion of processes and concepts if meanings are to be clarified and refined. Misconceptions and hazy ideas will be apparent and can be corrected. Talking with others is perhaps one of the most potent ways of learning in school as well as elsewhere.

3. The teacher must through skillful instruction, introduce the use of new terms into class room activities using old familiar ideas to develop the new ones.

4. Teachers need to consider the vocabulary of previous grades and to maintain it in addition to the new words being learned.

5. Materials other than a textbook will aid in the development of the vocabulary. Some suggestions include: problems of children, written by children, activities of children wherein quantitate thinking is needed, the use of charts, graphs, and diagrams in connection with other school activities, interpreting the activities at home that are concerned with arithmetic. These and many others will give meaning and opportunities for usage necessary for the permanent acquisition of an adequate arithmetical vocabulary.

Bibliography

1. Buswell, G. T., and John L. The Vocabulary of Arithmetic. Univ. of Chicago, Supplementary Educational Monographs 28, 1931.
2. DeMay, A. J. Arithmetic Meanings. Childhood Education 11:408-412, June, 1935.
3. Gray, Wm. S. Reading in General Education. Amer. Council on Educ., Wash., D. C. 1940.
4. Harap, Henry, and Barrett, U. Experimenting with Real Situations in the Third Grade Arithmetic. Educ. Method, 16: 188-192, January, 1937.
5. Hart, Archibald. Twelve Ways to Build a Vocabulary. Dutton, N. Y.,1939.
6. Lee, J. Murray, and Dorris May. The Child and His Curriculum. App.Cent. N. Y., 1940.
7. Morton, R. L. Teaching Arithmetic in the Primary Grades. Silver-Burdett N. Y., 1937.
8. Morton, R. L. Teaching Arithmetic in the Elementary Schools, 2 v. N. Y., Silver-Burdett, 1937, pp. 1-251; 346-397.
9. Radke, Frieda. Living Words. Odyssey Press, N. Y., 1940.
10. O'Rourke, Everett V. and Mead, Cyrus D. Vocabulary Difficulties of Five Textbooks in Third-Grade Arithmetic." El. Sch. J., 41, May, 1941
11. National Society for the Study of Education. The Teaching of Reading. Thirty-sixth Yearbook.
12. Monograph, Reading and Pupil Development, Univ. of Chicago, October, 1940.

IMPORTANCE OF BASAL TEXTBOOK IN TEACHING OF READING

Mrs. Edith H. Merrill, Elementary Specialist, The Macmillan Company

Most children will learn to read in some fashion whether we guide or direct them in the learning process or not. The story is told of the child who came to school for the first time able to read his pre-primer materials, but he read them upside down. After a little inquiry, his teacher discovered that the child learned to read in this most awkward way by sitting before his mother and watching the printed page while she read to him. It seems to me that the obligation of reading teachers is not to teach the child to read, but to teach him to read better.

The basal textbook, offering as it does a systematic developmental program carefully worked out for the busy teacher,can and should be a very vital part of this program of teaching the child to read better. Basal reading materials have been developed to serve definite educational objectives, and better basal reading series provide:

1. "An introduction to the most attractive and educationally valuable types of literature at the various age and grade levels."[1]

The purpose of this is to develop a real incentive for further exploration of each area or subject, thus avoiding a one-sidedness in the reading of the pupil. Through carefully-selected leisure reading the pupil will receive practice in reading, gain satisfaction in being able to read independently, and can be guided to enjoy books of good quality.

2. "Definite directions to the teachers to cover the development of practically all of the abilities now known to be involved in reading. ing."[1]

It is necessary to develop many complex reading skills if the pupil learns to read widely and enjoy reading. We must furnish material which will aid in teaching these skills. In order to develop the reading skills and the love for reading, the work must be started as soon as the pupil enters school. A well organized reading-readiness program for the pre-reading period is necessary. After appraising the reading readiness of the pupils, detailed lesson plans for the pre-reading period should follow. In planning for this period provision should be made for a wide variety of experiences so as to develop the abilities which lead to an interest in a desire for reading. Provision must be made for developing the abilities and interests on this level which enable the child to enter the pre-primer stage fully equipped for a joyous and successful beginning in actual reading. Carefully-graded basal material will guide the child through his reading work on various levels.

3. "Carefully-graded development of all the essential skills."[1]

We **must not** limit ourselves to developing interest in various types of literature, but must recognize that it is necessary to develop a variety of complex reading skills if the pupil is to enjoy reading and to read widely. A word analysis program should be started through games and play activities

---

1. Arthur I. Gates

using words that rhyme, words that begin with the same sounds, etc., during the pre-reading program. The settings for words must be carefully considered so the pupil will have the maximum opportunity for comparisons of similarities and differences. A systematic, gradual study of word analysis and phonetics should be carried on throughout the grades. Activities involving word development should be presented in a meaningful situation, not in isolation. Some of the skills that should be developed are:

a. surveying words and sentences from left to right
b. interest and ability in oral reading
c. ability to read recreational and study-type material silently
d. reading by thought-units
e. using reference material and the dictionary
f. summarizing

If the pupil meets new words, phonetic work and other skills in preparatory book or practice material, where context, picture, or other clues are used, learning to read will not only be easier but pleasanter for him.

4. "Provide for an introduction to other important types of learning."[1]

Materials should be organized in such a way as to interest the pupil in many activities which lead him beyond the field of reading, such as:

a. visits to nearby points of interest
b. construction leading from group projects
c. dramatics, etc.

The content and word enrichment activities should be selected so that the pupil will be introduced to a useful range of concepts and ideas. Meanings of new words should be learned as well as richer and broader meanings of known words. Through class activities of varied types word meanings can be developed and interest maintained. At every point the pupil's interest must be held so that he will react to concepts of meanings. Thinking and meaning should be developed as an integral part of the reading program. If we neglect to develop the thinking and meaning side of reading and over-emphasize the development of mechanics, the pupil's growth in reading becomes one-sided. Through the use of good questions we can stimulate thinking. Questions should be designed to make the reader think, to get new ideas, and to express problems in different ways. Questioning directed from one high point in the story to another will encourage thoughtful and efficient reading. Ask questions that will require "accurate recall, reason, constructive imagination, precise understanding, and power of analysis and judgment."[1] Teachers' Manuals should give practical suggestions for the development of rich and varied enterprises. Well-selected illustrations are also helpful.

Preventative teaching is far more effective than corrective work; however, we must recognize that there will be some cases needing special instruction. Emphasis should be placed on a developmental reading program throughout the elementary school in order to eliminate the necessity for intensive remedial instruction. There should be a definite readiness for each reading lesson. The pupil needs preparation for his assignment. The nature of this

1. Arthur I. Gates

work will depend on the objective or the purpose of the lesson. A preparatory book, workbook, or material prepared by the teacher can supply this readiness work. Over-emphasis is being placed on simplicity. Every child will learn to read in some manner, but our job is to teach him to read with precision and understanding.

If basal reading programs are organized according to these suggestions, provision is made for diagnosing pupil difficulties and abilities. The teacher can guide the work of the pupil better, and give each one the proper amount of review and repetition.

Reading must be taught on every grade level, and through the use of a good basal reading series pupils are taught the mastery of vocabulary, techniques, and skills throughout the elementary school.

EVALUATION, A STIMULUS TO GROWTH

Jessica Miller, School Psychologist, Long Beach Public Schools

"Time out" for evaluation need not be thought of as time borrowed from the work of the school day; the very process of evaluating may be as important work as any we do. The manner and purposes in the procedure are necessarily the important things which determine whether the experience shall only add more hindrances to the confused and none-too-willing child learner, whether it shall be a shallow routine and thus fall far short of its possibilities, or whether it shall be a positive force inspiring, directing, and assisting children's learning.

It is appropriate at this Reading Conference to consider something of the possible place of evaluation procedures in the psychology of learning to read. Used with careful thought and skill behind them, such procedures can provide a tremendous stimulus to growth.

When the reading achievement of a group is being tested, are there not ways in which we can make the experience of genuine educational value for the class? Too often we find it easier to use measurements in a purely routine fashion, losing sight of some of their fine possibilities for affecting more the learning of the pupils involved. Frequently we are prone to think of giving reading tests so that thereby we may learn about the pupils. This isn't enough. The whole procedure of appraising their reading status should be a growth-producing experience for the pupils themselves. Can we take the time and be thoughtful and patient enough to make something more than a rather empty experience of it? There are various means that teachers and others administering group reading tests may use to do this thing. The one outlined here may be suggestive.

Suppose that the teacher is planning to emphasize with her class the acquiring of good skills in handling the printed word symbols of reading materials. Appraising the beginning status will include the giving of some good silent reading test, but not that alone. The program of measuring may begin prior to that point, so that the administering of the formal test is only one incident in a sequence. During the days or weeks before the giving of the test a teacher will be noting rather minutely the various "tricks" of reading the pupils have developed. Notes will begin to go down in her ever-ready notebook, brief jottings that include this or that child's behavior and "feeling tone" about reading, this particular error or indicated need. She will also do some sharpening of the pupils' awareness of reading, its diverse nature and uses. By comment, question, and explanation she may help them gain a few more concrete ideas about the reading process than the usual child seems to have.

First of all, certainly, she must be at least fairly well informed herself about the rather complex nature of reading printed symbols. It is assumed that this hypothetical teacher has far more concrete, specific ideas of what goes to make up reading than the usual pupil, who often conceives of reading as a vague, general, unitary thing. I have sometimes found children who were perfectly convinced that you read only when you are calling the words orally! Probably in these days of diminished oral reading there remain few or none with that amazing concept.

There will then be many opportunities used and created by the teacher for

pointing out some of the different aspects and skills of reading, as they occur in some child's performance or are called for by the materials used. When some workers are preparing children for the measurement process in silent reading they refer to a concrete, simple parallel, the experience children have had in being weighed and measured by the school nurse. It should be made clear, however, that no one single device will be used to weigh and measure the child's reading; that process of measuring it goes on through the teacher's and others' eyes and ears daily. The coming silent reading test should not be emphasized; we must beware of making children at all apprehensive of this event; such a test should not stand out markedby from the rest of the analyzing process, should merely occur naturally, without flurry on one day, as part of "our ways of finding out about some of our reading." It may well be termed"one of the ways of seeing how much we have grown since last we were measured this way."

Standardized reading test results (unlike mental test data) can and should be reported to children. Fruitful ways of doing this reporting, however, must be thought out. Are we ingenious there? Do we project ourselves into these young ones and see what they need, and how the things we say affect them? Probably too often we create and leap over gaps that need to be filled. Don't we too often assume that children derive the same meaning that we do from reported results, and that they at once see clearly the implications for their future behavior? Some of us still even assume naively that they young learner is all thoroughly "cranked up" to go--because we are.

There might well be a class discussion following the standardized reading test, the purpose of which would be to help them understand what specific things the test was trying to do, and what the test tried to help them to show about themselves. Commonly there is the need to let children find out that they have not been expected to tip these "reading scales" at the highest point, that unlike their daily lessons, where complete performance is expected, these tests are made to test children of different ages and different growth levels. It is well to have the idea brought out again that there are other kinds of reading which this test did not touch, but which we can test in other ways. The terms in which the test results will be reported should be clarified at some point. Often it has proved perplexing to a pupil that children who are called "fourth graders" are said "to be in sixth grade in reading" or "in second grade." (Not only the children are perplexed at this last.) Can we say some simple, sensible things which make such results meaningful to them? Can we explain that people's reading grows at different rates, that people are not alike, and that some can understand harder books sooner than others can? Explaining low grade scores in terms of levels of growth should lay a more constructive basis for the children's understanding, accepting, and doing something about it than if the teacher conveys a feeling of shame attached to such a score or lets children conclude that those who make such low grade scores don't truly belong in some way with the others. Of all the unpromising ways to try to induce growth the latter would be the worst! Since a real sense of belongingness is indispensable for children's wholesome development and being free to learn, the importance of this point is considerable. It is our responsibility to safeguard against our measurements' being harmful to individual morale and the personal acceptability of each to the others.

When the group's test results are known by the teacher, she might well present the figures graphically on the board -- a good chance for the children to see the meaning of chart-making and the reading of such things. Tests -

contain different possibilities for profile graphs, so this procedure is more appropriate for some than others. To see where on the scale most of the class cluster on each aspect tested means more than merely to be told in words. The differences of excellence in various skills show up more convincingly this way. It is time-taking, but is more likely to be concrete to more pupils this way. How can people be challenged into effort without seeing the need?

Further interpretation by the teacher might well contain these ideas: that the values this year are going to be placed not so much on where we started but what we do and where we go from there; the important idea is not so much whether we are above or below someone else but how much growing each person does; the teacher will be the helper and guide, to see if each person is doing the right things to help himself grow; people can do special things to help their reading, and can improve a great deal, even if they have sometimes before failed badly and disliked reading. This sort of thing can serve to prepare attitudes in a group situation.

How thoroughly the teacher can cover each individual's test scores with him will depend much upon time available. A brief word about each or with each while supervising the reading of each sub-group may be the most that is possible Some teachers will wish to have simple, small, individual charts made either for or with the children, to help bring home to each one his particular strength and needs. Along with such charts should go oral or written comments, brief ones, which appraise other aspects of the child's reading. With only a few cases can this be done in great detail, but the noting of specific assets and needs can take place far more often than we commonly include it.

Evaluation of the child's reading should be a cooperative procedure engaged in by both teacher and child. At such a statement some people exclaim, protesting that one cannot expect a child to know much about such things, and that the teacher is in the position to reveal to the child what the facts are. Much of this is so, for the child learner hasn't the experience of knowledge to go far into the matter. However, a cooperative enterprise it should be and can be, to some extent. Naturally some children are more objective than others Some are readier than others to face their problem and to do something about it. The essential thing is for the adult to lead the procedures of analyzing the child's competence and needs in such a way that the child becomes part of it. Handled in this way most children can be made more conscious than before that it is their problem, and that thinking and analyzing of the matter can assist their working out of it. The manner of question which the teacher puts should draw finally from the child some observations of his own work, some beginning thinking about what people do when they read, and what he needs to do, or is doing, to secure results. When the child enters into the process, has accepted the shared task, and begins to make use of the evaluations, things are auspicious for increased learning. Frequently we have to work some time to bring a child to the stage where he accepts the matter as truly his responsibility, and is ready to work and to seek help. When Paul, a fifth grade boy with very poor reading skills, began to tell his teacher what things he noticed that he had trouble with in the lesson, and reminded the teacher to jot those down as she was making notes for his special practice work, we had secured a good basis for Paul's arriving somewhere.

The basic idea in the above argument for inducing this activity by the child is not merely the principle that children should participate as much as

possible in the matters of classroom living. That isn't enough to explain it. The idea is rather that we are trying to work on the person, not the reading. To quote Carl Rogers' admirable book:

> The individual and not the problem is the focus. The aim is not to solve one particular problem, but to assist the individual to grow, so that he can cope with the present problem and with later problems in a better integrated fashion.[1]

That statement places the emphasis where it belongs. We agree with him and the modern medical man also in placing a strong faith in the human organism's potential for and drive toward growth, health, and adjustment. Our work is not a matter of doing things to the child who has a reading problem; it is instead the work of enabling him to grow to the point where he can even begin to carry his own load. Important things can happen for the individual in the evaluation process.

Rogers warns us against the ineffective device of what he calls "exhortation" when working with a person and desiring to bring about a change.

> Such a method has been used both with groups and with individuals. Psychologically, it might be described as creating a temporary emotional upsurge and then trying to "peg" the individual at that high level of good intention... the most common sequel to such a technique is a relapse.[2]

In working with the individual who has problems, he also finds fairly ineffective the large use of strong advising, suggesting all of the solutions, persuading. This can serve in some cases to make an already dependent child only more dependent and others more negative! The desired thing is to help that person do more and more thinking, setting of his goals, and seeking for the solution. This makes for his growth. Why do we believe that teachers should allow children to participate in determining what learning experiences they shall have? It is in order to foster their optimum growth with the least amount of frustration. If we truly believe that we wish to produce self-reliant, self-directing individuals, we will see that evaluations are really growth experiences for the child.

Diagnosis and study supplemental to the classroom analysis are needed for occasional, especially puzzling cases. If the teacher is trained for doing this sort of thing it is excellent. There is often good opportunity in these individual evaluation sessions for establishing that fine personal relationship between teacher and child which is essential for assisting the child to grow.

Other specially trained workers -- counselor, school psychologist, special remedial teacher -- are often used for this more extensive diagnosis. The failing child is typically found to be passive in this individual diagnostic session. This attitude will many times undergo some change if the worker takes the point of view that both child and worker can find out things about the reading skills by this seeking. The idea that they have any possible interest in the procedure and can get anything out of it is usually mildly surprising

---

1. Carl R. Rogers, Counseling and Psychotherapy. Boston, Houghton Mifflin, 1942, p. 28.
2. Ibid., p. 20.

to these children. This attitude of merely submitting themselves for scrutiny is one of the things which the clinical examiner has to recognize and work with. These statements are only further reiteration of earlier points regarding the place of the child in the process.

Evaluation of some kinds should be a continuous process, occurring in daily lessons. For the solution of grave problems study must be continuous, checking our judgments, adding new ideas, evaluating our procedures and bettering them. When a keen scrutiny finds that the erstwhile failing child begins to show even small, positive steps toward a different way of reading behavior this discovery when noted can reinforce the upward trend.

A word might be added and a question raised about praise and its most beneficial use. The psychology of learning tells us much about the importance of satisfactions for furthering learning. Praise from the teacher is one of those sources of satisfaction. In the matter of bestowing recognition are we not frequently finding ourselves doing much less than we know about it? There are so many things to absorb our attention in the busy classroom, and we cannot note everything. As much as we can, however, we should note specific indications of growth, and attach values to these. When to praise? Perhaps we need to vary it with different children, and with the occasion. Perhaps a quick, immediate verbal reward by the teacher isn't always going to be the most effective means of reinforcing the drive forward. Dr. Carlson, the noted New York specialist on the training of spastics, made a thought-provoking statement in one of his addresses. He has found that when a faltering, uncertain child manages to perform the task which has been difficult for him it is better to postpone the praise a while, not calling attention to it immediately. He finds that immediate praise tends with those tense children to interfere with continued successful mobilization of their efforts. Given later it helps. While the problems of spastics are more extreme than those of our usual, normal children, we have among our worst reading problems approximately parallel instances of tensions and blocked or uncertain effort. Are there any variations which we might experiment with in our attempted encouragement of these stumblers? Might we sometimes need to defer that moment of recognition and bestow it privately later, so that the child has a chance to savor the venture's success and to feel the normalcy of being like others? It <u>might</u> mean this to some children. Certainly the argument is not for discontinuing praise, but of testing out its most effective uses.

Much that has been said up to this point might lead one to conclude that the base for evaluation is meant to be only a narrow, pedagogical one. This is not intended. We all know that it is often futile to approach the handling of a learning problem solely from the subject matter standpoint. Reading of printed word symbols is not a specialized function divorced from the doer; reading behavior is a manifestation of much of himself. We recognize the need for taking into consideration the important part played by emotional forces in interfering with learning. This is a matter about which we usually do not know enough. It certainly must not be omitted from our thinking and evaluating of the child's problem.

It is assumed in this paper that we are agreed as to the importance of including health measures, and have checked properly to see that physical and sensory equipment does not interfere with chances for learning.

If we are to help the child to new growth in reading we must extend the qualitative analysis, note his total reaction to living, his scope of experience, his emotional patterns and relationships. What are his concepts of himself, and if he is failing in school work of which he is capable, why is he perhaps finding it more satisfying to do this than to progress as others? Not always can we determine precisely what historically has caused the reading trouble, but a thoughtful search should be made because of the light it sheds on the direction in which to proceed.

The Binet test is employed by many people as an important evaluation instrument when a child is referred because of reading disability. It can have its useful place in various ways, contributing important information about the child's academic intelligence, many of his personal reactions, concept of himself, and other things. Often it is a pleasant success experience for the child, and establishes a working relationship between the worker and child which may be utilized for further helping work.

A word might be added here about the possible hindrance which a Binet test may even at times prove to be, because of the way in which it is interpreted and used. It has been the practice of some examiners rather to over-stretch the possibilities of the test, and to report in highly detailed fashion the presence or absence in the child of discreet mental functions; Comprehension, Reasoning, Memory, Concentration, Association are deduced from certain simple test items and long conclusions drawn. The statement that nin-year-old Johnny's Concentration is on a five year level and memory is almost a minus quantity can scarcely encourage the teacher to work with that wiggly Johnny. Doesn't it rather suggest that Johnny's problem be consigned to the great education wastebasket, "cannot concentrate," and let go at that? Too often, also, when a Binet has established the fact that a poor reader has normal learning ability, some teacher's reaction has been, "There! I knew he was just being lazy and could learn to read as well as anyone if he just would." The study of the matter considered to be complete, the pressures would then be applied!

There are of course some cases of reading defect where the usual best available means of analysis and procedure cannot lead to improvement of the condition, because the reading trouble is part of a deep, involved personality disturbance. Such cases require the help of a psychiatrist. Some occasional cases cannot be helped without analysis and long, intensive therapy by such a worker. Some cases require simultaneously therapy from the psychiatrically trained person and good remedial teaching from another worker. Not all reading problems are that involved, but we need to be intelligently aware of the importance of deep and remote emotional conflicts and anxieties in causing reading difficulties. Fortunately with keen evaluation and sympathetic, stimulating handling many puzzling cases prove to clear away encumbrances and to move forward.

When we turn our attention to evaluating what conditions there are about the children for wholesome development, the result naturally follows that we do more things to promote health-giving conditions. Let us suppose that the teacher appraises the group spirit or morale in her classroom. She hasn't been conscious of any very dark under-currents, but she decides to devote a little time to watching the interrelationships of the children. They are a well behaved class, on the whole, though there isn't any strongly developed group loyalty. Expressions of feeling and effort are decidedly individualistic.

The teacher watches awhile the social dynamics and uses the helpful now familiar sociometric technique. As a result she becomes more conscious of group social structure. She takes more thought about the importance for children's learning, of their group status. She will seek opportunities to help children find more favor in each other's eyes, and will create opportunities to throw them into cooperative, sharing work and play experiences. She will find subtle ways to help the social isolate into some group association. Such procedures as these are the ordinary suggestive ones which the teacher can use in social engineering to foster the development of group life, the socialization of the individual, the belongingness that supplies the warmth so necessary for growth.

This general fact needs repetition, that the things which we include in our evaluations will receive our emphasis, will be made our objectives. Development will be fostered in that direction.

We should watch with interest the promising new technique, longitudinal evaluation. So far it looks as if this means for studying the growth of children will have much to teach us about how the child develops totally, and how his reading gains are related to this. Olson and Davis at the University of Michigan are conducting interesting research on the total growth of the child. Growth curves of various aspects of physical and mental development are charted for each child: mental age, social age, weight age, height age, dental and carpal ages, grip age, and reading age. The "organismic" age (the average of all the age values) frequently coincides fairly closely with the reading age. There seems to be closer relation between these than between mental and reading ages. There is increasing evidence to suggest that when we supply a child's environment with stimulating things he will react to this and assimilate it in terms of his total growth potentialities, his organismic maturity.

Probably before long we shall evolve some practical ways for converting our evaluations in school into longitudinal form. The cross-section measuring, comparing each with the norm and with his fellows gives less of a picture of what process of growth is going on in the individual. The practical importance for guidance purposes of keeping longitudinal records of physical growth has been well pointed out in the Adolescent Studies by Dr. Herbert Stolz's work.

Last of all we grow, ourselves, in our ability to understand and handle children as we engage in thoughtful, critical, scientific evaluation.

EMERGING CONCEPTS IN THE TEACHING OF READING

Dr. Eason Monroe, University of California

Future historians of American education are certain to say that the twentieth century was marked by a major emphasis upon the teaching of reading. Certainly during the past thirty years few phases of educational work have received as much interest and attention. Hundreds of research studies, thousands of authoritative articles, and an annual investment of millions of manhours all testify to the importance we assign to the task of teaching the youth of the nation to read.

Some future historian may be able to record the date when all the problems of the teaching of reading will have been solved. In 1943 we can only think wistfully of such a prospect. Only the foolish would insist that they now know <u>how</u> to teach reading. There are as many ways as there are teachers of reading -- and teachers of reading are increasing in number.

But with all the differences which exist in viewpoint and in technique, we are making headway in our mastery of the reading problem. Certain concepts concerning the nature of reading growth, the conditions under which such growth occurs or is blocked, and the relationships among reading and the other processes of living, are gaining agreement. We are beginning to understand better the implications of these concepts for our teaching.

Without suggesting that there will be full agreement on all points even among us here, I should like to offer an interpretation of a few of these concepts which are serving as basic guides in the building of reading programs throughout the nation. I should like to say something about implications, too.

<u>1. Reading growth is a natural part of growing up in the modern world.</u>

Growth of any kind results from the interaction of the individual and his environment. It is a way of adjusting for survival. The modern world is a reading world. In it the normal individual cannot <u>live</u> unless he reads. Every normal youngster wants to learn to read because he must -- he must, whether he recognizes it or not, in order to live.

This view of reading growth has great bearing upon our relationship with the children we teach. Some of us approach our task as though it is our responsibility to <u>produce</u> reading growth. Of course, we can perform no such miracle. Reading growth takes place <u>inside</u> the child, as a part of complex inner changes. It cannot be applied from the exterior. Youngsters learn to read, not alone because we teach them to read, but because their world demands that they learn.

Our function, then, as teachers of reading is to recognize that the basic drive to grow up in reading is "already there" and, by modifying the environment of the child, to guide and to stimulate the rate and extent of this growth. In this capacity we look for those reading motives which are part of the lives of young people and help them to have reading experiences which fulfill these natural motives.

Prescott expresses this view as follows:

> It is my sincere and earnest belief that, if we gave most serious efforts to providing, for children up to the age of twelve years, the rich experiences of the sort that they would naturally seek in our culture, nearly all of them would read fluently and with good comprehension at this age. The rest would learn at that time with less than six months of instruction....They would seek to learn to read because they would need to read in order to find out what they wanted to know, because they had a motivation based on their own experience that pushed them to learn as rapidly as possible...Naturally they would need assistance in developing this skill, so provision would have to be made for having graded reading materials available and for having a professionally trained adult accessible to suggest effective practice procedures and to warn against incipient bad habits. The rest could be left to the children, to their dynamic desire to participate fully in the life and experience of the culture, to their ever-present wish to attain the intellectual as well as the physical stature of the adult.[1]

2. Reading growth is highly complex and individual.

We now accept the view that reading growth is highly complex and that wide differences in reading growth pattern exist among individuals at all levels of maturity. Common observation and a great body of experimental evidence support these conclusions. The most difficult problems in our field lie in adjusting our guidance procedures to these complex individual differences.

In the past our efforts to provide for individual needs have been characterized by at least three shortcomings: First, we have usually divided students into groups of inferior, average, or superior readers on the basis of only one or a limited group of reading characteristics. Second, we have frequently misinterpreted test norms as directives rather than descriptive terms and have set standards of expectancy for all youngsters of the same age and grade. Third, after setting up "homogeneous" groups, we have usually provided identical instructional experiences for all members of each group.

But, these shortcomings are rapidly being removed. In appraising reading growth we now take into account as many factors as possible -- attitudes, abilities, and habits, as they operate in a variety of formal and informal situations.

Taba summarizes rather well our developing attitude toward grouping procedures:

> ...Provisions for individual differences should make flexible use of group situations rather than emphasize devices which isolate the individual or segregate the group. Provisions of the latter type are fruitful only for certain limited purposes and effective only as temporary measures...Usually, however, individualization within the common frame-

---

1. Daniel Prescott, "Basic Facts and Principles Underlying Growth in Interests, Appreciations, and Tastes," Reading and Pupil Development, Supplementary Educational Monographs, No. 51, Univ. of Chicago, 1941.

work of a group project or a group study is more effective.[1]

We are learning how to interpret and to use the statistical data we obtain from standardized reading measures. It would be ridiculous to expect all young people to attain a height of say five feet at exactly the same age. Although physical growth and reading growth are not strictly comparable, their comparison is useful. The futility of setting standards of reading performance for certain ages or grades is similarly clear. To become preoccupied with statistical averages and to consider these as group goals is unfortunate practice. Actually much harm can be done those youngsters whose reading growth is slower than that of their fellows by condemning them in one way or another for failing to reach standard levels of performance at specified times. Harm is also done those who surpass these levels earlier -- these unfortunates are usually left to forage for themselves. Capacities for and rates of reading growth vary so widely that group averages become meaningless in considering the individual child.

Regardless of the circumstances under which we work, the individual must be the center of focus. Practical considerations will always limit the extent to which we can do so, but we must "get at" the individual if we are to help him effectively. Many teachers are facing this responsibility in highly creative ways.[2] We all need to intensify our efforts to improve techniques for the analysis of individual needs and to individualize to as great a degree as possible the guidance we offer each of our students.

3. Reading growth is continuous throughout life.

Not so very long ago it was generally thought that children should have learned to read by the end of their third school year. In the first three grades, we said, the youngster learns to read; after that he reads to learn. The statement is apt, but it doesn't happen to fit the facts. Reading and learning experiences are interwoven throughout life. Actually, it appears that reading growth continues as long as reading is a part of life experience. Studies of reading growth among high school and college students, and even among adults, give clear evidence of this continuity.

Obviously there are important differences between the reading growth of the third grader and of the university senior. These differences will be related always to the reading problems which confront the individual at each level. Maturation in reading involves successful adjustment to the progressively more complex and difficult reading situations of school and life.

Not only must we provide for the promotion of reading growth at all levels of educational experience, but we must offer the special types of

1. Hilda Taba, "Problems Encountered in Adjusting Teaching in Various Curriculum Fields to Individual Differences," Adjusting Reading Programs to Individuals, Supplementary Educational Monographs, No. 52, University of Chicago, October, 1941.
2. See William S. Gray, Adjusting Reading Programs to Individuals, Supplementary Educational Monographs, No. 52, University of Chicago, Oct. 1941.

guidance which are appropriate to the problems and needs of the young people at each level. The movement to offer instruction in reading in the intermediate grades, in junior and senior high schools, in colleges and universities, and in adult education centers is a gratifying recognition of the need for continuing guidance.

4. Reading growth is interrelated with all the many other aspects of human growth.

The organism-as-a-whole concept of modern biology and psychology has had important effect upon our work. We now accept the proposition that human beings function, grow, read, as total entities. All human behavior, we believe, is governed by infinite and delicate relationships within and without the organism. What goes on in one part of life will affect all other parts.

"Normal" conditions of living promote "normal" fulfillment of the growth capacities of the individual. Retardation in one type of growth will often have measurable retarding effects upon all other types. Insufficient diet, for example, produces a far-reaching pattern of consequences.

Recent studies of child development of reveal reading achievement as an aspect of the total growth of children.[1]

We no longer think of reading growth as an isolated, independent phenomenon. It is closely interrelated with all other physical, mental, emotional, and social growth. It is promoted by total growth; it contributes to total growth. In turn, it is retarded or blocked by retardation of other growth factors.

Two important implications of this concept are being expressed in modern teaching practice:

First, when we find a child who has failed to grow "satisfactorily in reading, we look beyond his reading behavior into his total life to discover, if we can, the basic maladjustments which have given rise to or are related to his reading retardation. We work then to remove or to alleviate those maladjustments and thus make natural reading growth possible.

Second, although we commonly refer to various aspects of reading behavior as reading interests, abilities, or habits, we recognize that they grow together. To affect one is to affect all aspects of reading. Frequently reading programs have been based upon the assumption that the only important objective is to promote growth in reading skill. Other programs give attention only to the growth of reading interests. Obv ously, any plan which recognizes only one or a small constellation of reading characteristics is misconceived. Although in our teaching we may wish to shift emphasis from time to time, any plan we devise and follow must provide for the growth of attitudes, abilities, and habits in a unified pattern. Each step in the plan must be conceived in the light of these relationships.

1. Willard C. Olson, "Reading as a Function of the Total Growth of the Child," Reading and Pupil Development, Supplementary Educational Monograph, No. 51, University of Chicago, October, 1940.

5. Health, happiness, and security build the positive base for individual reading growth.

For many years we have been searching for a single or dominant cause of all reading difficulties. We have been hoping too to find a "specific" -- some single, simple formula which will treat all cases. Our efforts toward these ends have been fruitless. The causes of reading maladjustments are so complex and vary so greatly among individuals that we are rarely able to put our fingers on any single factor and say, "This is the cause. We can 'treat' the case in this way."

We are coming, therefore, to take a broader, more positive approach. First, we are working with increasing effectiveness to prevent reading difficulties. Carefully organized reading readiness programs reduce the number of maladjustments which are likely to appear during the early reading experiences of children. Second, when we find youngsters whose reading growth has been blocked, we give attention to the strengthening of the positive characteristics, conditions, and forces in their lives. By working to improve physical health, emotional adjustment, and social environment, and to find successes and satisfactions in the areas of ability rather than focusing attention constantly upon disability -- in short, by helping each youngster attain health, happiness, and security -- we build a positive base for reading growth.

6. All young people need guidance in reading.

A great deal of fine, sympathetic teaching has been done in remedial reading programs. Many youngsters have been helped back to full reading "Health" when provision has been made for their individual guidance in some type of remedial reading plan. Yet, since the typical remedial reading program provides for only a limited number of students, since it focuses both student and teacher attention upon negative rather than positive characteristics, and since segregation often results in severe negative reactions by the so-called "inferior" readers, many teachers are questioning the remedial reading plan. In such programs not the least harm is done those youngsters who are not "fortunate" enough to be assigned to a remedial reading section. These "superior" readers are usually given no further organized reading guidance.

Although their needs differ markedly, all young people need certain amounts and kinds of reading guidance. For one student there may be need for a thorough-going program to develop favorable attitudes and basic abilities. For another, there may be need only for guidance in the refinement of already fairly well-developed critical reading abilities. But the needs of both are important.

Increasing emphasis in the literature of our field upon "developmental" reading programs is a welcome sign that in the future we shall offer reading guidance not alone to those few students in each school who have failed consistently to develop their capacities in reading, but to all students, helping each one develop his maximum reading power in terms of his individual capacities for such development.

7. Reading guidance is a responsibility of all teachers.

Both experimental evidence[1] and our own practical experience emphasize the point that no single teacher or group of teachers in a school can safely take sole responsibility for reading growth. Teachers of science, mathematics, history, and the other school subjects who expect the English teachers to do the whole of this job are asking for a transfer of training which cannot be produced. Although we commonly speak of general reading ability, there is no very clear evidence that such ability exists "in general." The abilities we use in reading are always specific -- specific to the particular material and purposes of our reading. One learns to read mathematics by reading mathematics, and likewise for the other specialized reading abilities. Whereas, it may be reasonable to suppose that some teachers of the school will assume responsibility for certain emphases on reading, the total task must be shared by all teachers.

Of course, in a very real sense, all teachers are now teaching reading, whether they recognize it or not. The fact that reading is involved in every course in the school curriculum means that the experiences which young people have in various school situations will affect very directly the growth of their reading attitudes, abilities, and habits. Teachers who require the reading of dull, unreasonably difficult texts or who otherwise make reading unsatisfying and unpleasant are teaching <u>poor</u> reading and are retarding the reading growth of their students. Such unthoughtful, negative procedures can easily be made positive.

The school-wide reading program[2,3] is being proposed as a means of organizing the energies of all teachers in the school to promote the reading growth of all students. When, by developing team-work and united effort, groups of teachers learn to divide sensibly among themselves the total responsibility for the reading growth of every youngster, many of their educational difficulties will be solved.

<u>8. Young people grow in reading</u>

a. By reading.

We learn to read by reading. Of course, we learn to read partly by developing and strengthening our physical, emotional, and social capacities for reading. We learn to read, we may also say, by living. But finally, we develop whatever power in reading we may possess through direct reading experiences.

Does it seem too obvious to suggest, then, that reading programs should be characterized principally by the provision for numerous and varied opportunities to read? Yet, all too few programs make such provision.

---

1. Paul B. Jacobson, <u>Two Experiments with Work-type Reading Exercises in Ninth Grade</u>, Univ. of Iowa Studies in Education, Vol. 8, No. 5, 1933.
2. William S. Gray, <u>Co-operative Effort in Schools to Improve Reading</u>, Supplementary Educational Monograph, No. 56, Univ. of Chicago, 1942.
3. Eason Monroe, Holland D. Roberts, and Violet G. Stone, <u>Teaching Reading in the Secondary School</u>, Bulletin, California State Department of Education, Vol. 12, No. 3, March 1943.

If we expect young people to read, reading materials should be at hand in the classroom. Attractive, appropriate materials made easily accessible will do as much as any other single provision to promote reading experiences. In addition, we usually need only allow time and freedom to read. The free reading program which included systematic individual guidance seems still to be one of the most effective teaching plans.

b. By reading materials which they can read.

The findings of a study made several years ago[1] indicated that a majority of the students in a typical ninth grade class could not understand even the least subtle ideas of literature considered "standard" for their grade. Other studies have repeatedly confirmed these findings for other groups.

In recent years, improvement in courses of study and in text-book preparation and the introduction of more flexible reading requirements have done much to remove this serious error. Yet we may well suspect that a great many young people are still asked (required) to read materials which they cannot understand. The best evidence we have, the results of our own experiences, and pure common sense lead us to believe that young people do not grow in reading by being frustrated during a major portion of their reading time, but rather through success and satisfaction in reading. If this is true, we must all make every effort possible to assess accurately the reading abilities which our students possess, wherever and whenever they read, and help them find materials which they are able to read.

c. When their reading has high interest, significance, and purpose in their lives.

One of the most wholesome influences in the modern reading program has been the emphasis upon developing interest in reading among all students. Recognition is clear that without interest young people will not read, in spite of persuasion or coercion, and that without reading experiences they will not grow in ability to read.

Here again the approach must be individual. What interests one child may not interest another. What is significant and meaningful for one may be trivial or incomprehensible for another. As adult readers we know well what it is like to lose ourselves completely in the fascination of a good story, or to feel the importance or helpfulness of another person's thinking in relation to our own personal or professional problems. On their level and in terms of their interests, experiences, and purposes, we want young people to enjoy, as often as they can, similar emotional satisfactions in their reading, not alone for the pleasure which results, but because through such satisfactions reading growth is highly stimulated.

9. The highest purpose of the reading program is to promote personal and social welfare.

What we teach and how we teach depend pretty largely upon what we think is important. The plan and operation of any reading program will take form from the purposes or values it is designed to fulfill.

---

1. T. W. H. Irion, Comprehension Difficulties of Ninth Grade Students in the Study of Literature, Teachers College Contributions to Education, No. 189, Teachers College, Columbia University, 1925.

Of course, reading is a valuable end in itself. The satisfactions of being able to read, to understand written language, to have reading experiences -- these are important. But they are not all-important.

Reading is important because it is a means of improving personal life. Through reading, all people can (and many do) improve health, develop wholesome understandings of themselves and of others, make accurate judgments, improve social conduct, develop better relationships with others, and fulfill other basic life needs. Reading is a powerful means to health, happiness, and security which, it seems clear, are basic to all types of personal growth.

Reading is an important means, also, of improving society. Consider the tremendous problems which confront today the American people, as well as the people of the world. There is a war to be won and a peace to be built. These tasks require the best thought and action we can give to them. Reading -- effective, critical, intelligent reading -- can be a mighty factor in the fulfillment of these tasks. Reading, in this relationship, becomes action, a vital part of the total social action which builds toward the welfare of all people.

If we take these two purposes seriously and use them constantly as guides for our work, we find the answers for many special questions which puzzle us.

Why do we teach reading? To build a better life for all people.

What shall young people read? Whatever helps them understand and solve the problems which confront them as individuals and as members of world society.

How shall we evaluate the results of our work? By searching in the lives of young people for evidence of well-adjusted, rational, mature behavior.

In the light of such purposes and as a result of the many years of experience we now have behind us, we are finding better answers to more of the many questions which have concerned us. We are making headway. No one of us will deny that we have yet much to do. If the concepts which we have been thinking about together are accurately interpreted and if they are important, we must all continue wholeheartedly in our efforts to carry them into action.

AUDITION AND NUTRITION:
A SURVEY OF THE PROBLEMS OF THE HARD OF HEARING

Ray M. Moose, M. D. Otologist, San Bernardino

We have met to discuss the problems of the hard of hearing because too many people do not hear well enough. Seventeen million people in our country--the equivalent of the entire population of Turkey -- are handicapped because of hearing losses. This creates problems that can be solved only by the interest and activities of many groups and individuals -- doctors, educators, legislators, scientific investigators, philanthropists. (Chart shown.)

Classification of the problems of the hard of hearing as blocks that increase in size as an inverted pyramid. Commencing with the first problem -- that of the prevention of deafness -- we must primarily be concerned with education on health and nutrition. Failing in these the other problems increase.

Our purpose here today is to present some of the more interesting phases of the mechanism of audition and some of the more practical aspects of that preventative work -- applied nutrition.

Dr. Lewis with his movie film (shown) has contributed a good feature to the program in presenting the following sequence of events as part of the mechanism of audition:

1. Sound waves as mechanical energy cause vibration of the ear drum and chain of ossicles that lead to the fluid in the bony capsule of the inner ear. This fluid in the inner ear belongs there and serves a purpose. In it are suspended the specialized nerve endings of the auditory nerve. It has nothing to do with fluid that sometimes gets into the middle ear or external ear from diving into water.

2. Sound waves that travel through the ear drum down the ossicular chain to the inner ear set up vibrations in the inner ear fluid which agitate -- stimulate the auditory nerve endings that are suspended in the inner ear fluid. The mechanical energy there is changed to electrical nervous impulse that is carried to the brain and interpreted as sound.

The ear drum and ossicles serve to amplify the sound waves, otherwise the spoken voice would not be heard. In the absence of an ear drum however, a loud noise is heard because the sound waves agitate the fluid of the inner ear by bone conduction through the skull.

Damage to the hearing mechanism comes most often from infections that enter the middle ear cavity through the eustachian tube. This tube leads from the nose and throat directly into the middle ear cavity.

Danger of nose and throat infection

Damage to the hearing mechanism comes most often from infections that enter the middle ear cavity through the eustachian tube. This tube leads from the nose and throat directly into the middle ear cavity.

Therefore any cold or sinus trouble or sore throat endangers the hearing

apparatus. Prevent the onset or spread of nose and throat infection and you prevent most deafness.

Importance of nutrition

Nutrition is fundamentally preventative medicine. A wise choice in food selection results in improvement in structure and function of all organs.

The slides (shown) of observations on my cases presented here picture improvement in general function on improved diet and vitamins. They show no specific observations on ear conditions, yet we know the organs of audition must receive their share of the benefits. This idea was expressed 2,000 years ago by Plato in these words:

> "I dare say that you may have heard eminent physicians say to a patient who comes to them with bad eyes, that they can not cure his eyes by themselves, but that if his eyes are to be cured, his head must be treated; and then again they say that to think of curing the head alone, and not the rest of the body also, is the height of folly. And arguing in this way they apply their methods to the whole body, and try to treat and heal the whole and the part together. And they are right."

Incidentally, to digress a little and quote Dr. R. J. Williams (Science 95, 340, 1942), there are other rewards of special interest to educators from a good diet; he states:

> "It should be pointed out that good diets, which mean an abundant supply of vitamins, among other things, promote intellectual keenness as measured by psychologic tests both on animals and human beings. There can be no doubt that much dullness on the part of schoolchildren, particularly among the lower income groups, can be traced in part to a lack of the proper kind of food and specifically to the lack of enough vitamins."

Points on selecting a good diet

Instructions to follow in selecting a good diet need not be long or tedious. A few simple rules suffice.

1. Provide daily intake of adequate supply of animal proteins -- those protein foods of animal origin -- milk, cheese, eggs, meat (or fish, fowl or rabbit). (May sometimes substitute peanut butter and dried beans to comply with rationing requirements.)

These animal proteins supply the building blocks of the tissues and also provide the materials for antibodies and immune serums that the body must make for protection against bacterial invasion.

2. Each day include milk, cheese or buttermilk. These foods supply calcium as well as protein. Both are necessary. For children 3 or 4 glasses of milk daily, for adults 1 pint. Both children and adults should eat cheese freely, cottage cheese, or any kind of cheese. One glass of buttermilk and

one helping of cheese daily would be good for those adults who say they can't take milk. Use milk in soups and other foods.

3. Take citrus products, tomatoes or raw cabbage daily. Unless this is done there is a danger of a vitamin C deficiency. Vitamin C is the wound healing vitamin and maintains healthy gum tissue about the teeth.

4. Select once or twice a day green colored or yellow colored vegetables, e.g., broccoli, carrots, sweet potatoes. Here you get vitamin A.

5. Eat fruit for dessert as a rule -- fresh, dried or canned fruit.

6. Use whole grain cereals like oatmeal and select 100% whole wheat bread.

7. To lose weight: Avoid all starches, fats and sweets. Take milk -- (pour off cream) -- cheese, eggs, lean meat, vegetables and fruit. (This paragraph is given to encourage those to take milk, who think milk is fattening.)

8. Foods to avoid: Avoid foods composed largely of sugar, such as candy, synthetic syrups, sweetened carbonated beverages. They are deprived of vitamins and minerals. Use sparingly all types of cooking fats and greasy foods.

9. Always eat breakfast. Even 1 glass of milk (cold or warmed) and 1 or 2 oranges will add many nutrients to the day's needs and lessen fatigue.

Conclusion

Good nutrition is the ideal state; it is fundamental. One essential for its attainment is proper food selection, yet that is not all. What is eaten must be properly digested, absorbed and utilized. Inadequate rest, overdoing, loss of sleep will interfere with the digestion, absorption and utilization of food, and predispose to bacterial invasion.

Rest in bed is a sovereign remedy for colds, sore throats and upper respiratory infections. With rest in bed, warmth, light diet and free use of drinking water the fresh cold with sneezing and watery discharge should not progress to the stage with thick purulent discharge, where every hour the ears are at stake.

VISUAL SKILLS AND VISUAL TRAINING

Donald E. Morrison, O. D., Morrison Visual Clinic, Alhambra

From man's earliest existence, he has been in constant struggle with his environment. How to adapt best his methods of living to survive, has been his greatest problem. To enable him to compete successfully with the other living beasts, nature gave to man the very best she had to offer -- a superior nervous system. With this, man, with his limited strength and inadequate armament, has been able to conque completely all other factors in his environment. Intelligence has been the panacea that allowed man to subjugate all other beasts, insects, diseases, and space.

Man's senses, although not as perfect as can be found in isolated cases, are, as a group, highly superior to those possessed by any other species. Some animals have better sense of smell and hearing, insects have greater strength in proportion to their size, and many birds have superior distant vision. None, however, possess an individual average of all-around sense superiority.

To remain in contact with his environment, nature gave man five senses. In increasing order of importance, they are: Taste, smell, touch, hearing, and sight. Throughout the years that have passed in man's climb toward a higher civilization, the importance of these, with one exception, has remained about the same. The one sense to which higher civilization has meant greatly increased usage, as well as much more complex adaptations, is the sense of sight. The uses to which this sense is put and the efficiency of those efforts are known collectively as visual skills.

Compare, if you will, the original man using his eyes to locate game, kill that game, and use it for food and clothing, with the average student of today first looking at the blackboard, then to a book. The student is using his eyes in a highly artificial way, in attempting to interpret, quickly and accurately, the artificial symbols he is seeing.

As civilization has advanced, man's visual skills have changed from essentially simple far-point vision to critical near-point seeing. Evolution is a matter of millions of years. Yet this change has taken place within the last two centuries and been greatly accelerated in the last two or three decades. Is it any wonder that we have people unable to cope with this rapid change of environment? Is it any wonder we have eye trouble, nearsightedness, or reading difficulties? Is it any wonder we have scientists, teachers, laymen, all intensely interested in visual skills? Through this study man can practically trace his efforts to adapt himself to a thing he has created -- a near-point habitat for eyes functionally developed for far-seeing only.

Visual skills can be broadly defined as the interrelated components of the complex act of seeing. This includes all factors of sight, from the light entering the eyes until the final interpretation by the brain. Because of this, it is usually divided up into two sub-headings: Functional and interpretative. The functional phase of seeing includes all physical and physiological processes set in motion as the light enters the eye, becomes nervous energy, and is transmitted to the brain. Interpretative visual skills involve the interpretation of the nervous impulses that come to the brain.

Visual training is defined as any or all techniques that train the eyes for effective performance of a visual skill. It does not matter whether the training is for the original development of visual skill, or the correction of a visual skill. Remember, that when we speak of visual skills, we mean all phases of seeing. Thus visual training also includes the training of the interpretation of what is being seen.

Therefore, not only specialists in visual efficiency, such as myself, are interested in visual skills, but also psychologists, educators, social workers, and practically all persons who have the necessity to teach anything to anyone. Which phase of what belongs to whom, we won't attempt to answer in this paper. Be it sufficient to say that the problems of one are the problems of the group. It is necessary that each comprehends enough about the other's field to understand intelligently the why's and wherefore's of his own field. It is only by the intelligent coordination of all phases of visual training that satisfactory results or concrete knowledge can be crystallized for the benefit of humanity.

In common with all other habits or reactions, visual skills must be divided into two phases: 1. Primary visual skills; 2. Secondary visual skills. The primary skills are those reactions that are inherited and are instinctively done with no element of learning involved. Secondary visual skills are those skills which represent habits learned by repeating the same act over and over until it practically becomes instinctive. They are usually formed by the combination of primary reactions in a definite pattern.

The primary visual skills consist of the three elements involved in seeing -- physical, physiological, and psychological. The physical phase of seeing is that phase during which light radiates from the object in space and enters the eye and impinges upon the retina. Only this much is primary. Any change in the light, in an attempt to eliminate some of it or bring it to a clearer focus, is a learned habit and must be classified as a secondary or associated reaction.

The physiological phase of seeing consists of changing the light that strikes the retina into nervous impulses and transmitting these impulses from the retina to the interpretive centers of the brain. This is the only phase of vision that remains constantly primary and with which no training can ever be done. Under this phase also comes the physiological aspects of the eye motions. As with any neuro-muscular association, the factors involved can be varied at the will of the individual. Only general eye motions or the unassociated rovings of the eyes can be considered to be primary to inherited.

The primary reaction, generally considered to be a portion of the psychological phase of vision, is merely recognition by the individual that light is hitting upon the retina, or the awareness of a nervous impulse. This is often found in the lower organisms where they will move away, or be attracted to light, yet not definitely see objects. The recognition of objects by association must necessarily be a learned reaction.

In secondary visual skills, it must be clearly recognized that they are learned processes. They are usually formed by the combination in certain patterns of primary visual skills. From the original secondary habits so

developed, further recombinations of skills are made and so on until the need of the individual has been met. As in any other form of living the person adopts the course of least resistance, and thus malformations of those skills may result.

In tracing the development of the secondary visual skills to their highest pinnacle, we will start with those developed from the primary skills. In order that an object out in space may be clearly seen, two conditions must be met. First, there must be adequate light. Second, there must be a clear focus upon the retina. Nature has provided an automatic diaphram, the iris. This regulates by shutting down in the presence of too much light, or opening wider in the absence of sufficient light. This reaction occurs very young in the individual's life, being developed by the time the child gets his eyes open. The second phase, or a clear focus upon the retina, is regulated by the crystalline lens, which automatically increases or decreases the power of the eye so that objects either far or near remain in sharp focus upon the retina. To develop this "accommodation," nature makes most of the small babies excessively far-sighted, or hypermetropic, so that a constant stimulation is necessary.

As most of you know, there is only one small area of the eye that is capable of seeing really sharply. This is so small that at a distance of ten feet only two inches of space can be held totally and equally clear. From the primary eye movements (which, as you will remember, were aimless wanderings) the eyes develop so as to be first monocularly then binocularly capable of turning the eyes, directing them to identical points on the object, that the two images shall lie on identical points on the two retinae. This act is known as fixation, which is accompanied by accurate focusing involving accommodation for all distances within infinity. Thus, the best binocular vision of the object may be obtained.

Concurrently, other developments are going on; the brain is beginning to recognize, by association and repeated stimulii, certain objects and colors as having been seen before. Thus, intelligent recognition of the stimulus being sent to the brain develops from the original ability to perceive light. Recognition of a stimulus happens first. It is the condition of the stimulus presented to the brain that sets off the mechanism regulating the focus upon the retina, and the fixating of the image upon the fovea of the eye.

Therefore, the statement can be made that seeing is a psychological phenomenon. We see, not with the eyes, but from the image recreated in the brain and projected out into space.

These three factors, then, clear focus, fixation of the image upon the fovea, and the interpretation of what is being seen, form the basis for all further development of visual skills. Single, simultaneous, binocular vision is the combination by the brain of the images of the two eyes. In order that this be made possible there is an association developed between the accommodation and the convergence of the eyes. This is called the triangulation reflex. By constant association, whenever the eyes converge, the eyes also tend to accommodate. The reverse is also true. These reactions are known as accommodative convergence or the convergence-accommodation. They are important to us because it is by the use of these, that investigations of advanced visual skills become possible.

In any list of modern visual skills, reading must be placed first. Today a large part of education is by means of reading. Reading involves two sets of visual skills: First, the mechanical motions by which the eyes move across the page, pausing to fixate the words, yet seeing them clearly and singularly; and second, the skill needed to comprehend the artificial symbols that the eyes are seeing.

Two other sets of visual skills must also be named if our picture is to be complete. Those visual skills are needed by the person to carry on adequately his or her occupation and avocation. These are, of course, as varied as are occupations. Each one requires a definite study of the use of the eyes in that occupation if a true recognition of the need is to be found.

There is very little similarity between the recreations of the people today and centuries ago, but in most cases a thorough study of the visual skills needed in occupations, will also touch upon most of the skills needed for avocations. What is one person's work is another person's pleasure. Some people say it depends upon whether or not one is paid for what he is doing.

Visual skills and visual training are based upon certain definite rules or foundations. As previously stated, seeing is made possible by an elaborate series of learned reactions or habits. Any rule that can be applied to any habit, can also be applied to seeing. Therefore, any visual habit can be eliminated, and new ones substituted, or development controlled, so that advancement can be made along a certain definite design.

The difficulties involved in any such program of development are governed chiefly by three factors: How fundamental the habit is; the length of time it has been established; and the reason for its development in the first place. The time of development in an individual, and its degree of usefulness to the individual will generally control what can be done with it. All eye habits are developed in response to certain needs by the individual. Normally, the majority of uses need the same general visual skills. If this were not true, modern education as we know it could never have developed.

The usual order of the development of visual skills from infancy to maturity proceeds around known landmarks. B arring certain factors that we shall discuss later, it proceeds as follows:

1. Perception of light.
2. Moving of the eyes toward that light.
3. Differentiation of color or intensities of light.
4. Differentiations of objects.
5. Clear focus of objects.
6. Recognition of objects.
7. Accurate fixation upon objects, first monocularly, then binocularly.
8. Hand-eye co-ordination.
9. Specialized visual skills, such as reading, occupational, and recreational.
10. Judgments of distance and size of non-reachable objects. This is commonly called depth perception. It may be monocular or binocular. If the distance is judged by the kinesthetic clues gained in the convergence of the eyes, it is binocular. If it is gained by perspective, overlay, or highlights or shadows, it is monocular. Actually, there are four binocular clues to depth perception, and fourteen clues to monocular depth perception.

Most judgments, however, combine both sets.

If, for any reason, the development of these skills is faulty, they are easiest to correct in the reverse order to that in which they developed.

There are very, very many reasons why the proper development of visual skills sometimes fails. These also can be classified into three types -- physical, physiological, and psychological.

Physical factors in themselves are perhaps the most common causes. They are: Lack of the proper organisms to develop; permanent or disabling injuries; diseases; and optical factors. Optical factors, of course, fall into the old standbys of hypermetropia, (far-sightedness), myopia (near-sightedness), and astigmatism (distorted vision). Also entering under optical errors is a relatively new one, called aniseikonia (that condition in which the images seen by the two eyes are unequal in size or shape. With this condition, the brain has difficulty or is unable to fuse the two images.)

Why proper habits or skills fail to develop if the parts of the eye are missing or injured, requires no additional explanation. However, it may be well to explain how optical errors can affect the formation of visual habits. Vision is composed of many habits, all functioning together to produce the whole interpretation of what is being seen. Assume, however, that in the primary stage of vision there existed an optical error. If this error were great enough so that it could not be corrected by the subconscious nervous system, then the brain would turn control over to the voluntary or conscious nervous system. As the voluntary nervous system is much less efficient than the autonomic, there is a much more rapid nervous fatigue. Also the attention of the individual is preoccupied upon clearing the image rather than upon the material he is trying to comprehend. If there be any flaw in the development of any of the original visual skills, then all the higher skills that normally incorporate that primary skill in their execution will suffer, and will seldom develop. If they do, they are faulty and inefficient.

It is for this reason that startling gains are made by some students after they have been fitted with a pair of corrective lenses. Before any visual training can be accomplished and made to stick, it is necessary that the eyes be freed from any error of refraction by means of glasses. The correction of the eye errors allows the student to concentrate upon the interpretation of the material or the acomplishment of the purpose, rather than upon the mechanical or functional phases of visual skills.

Physiologically many reasons can be listed for impeding or preventing the proper development of visual skills. One is nerve blocs or mental tics, where the stimulus going to the muscles of the eyes merely go into a spasm. This is very similar to the effect produced upon the speech of a stutterer. Again there are weak muscles, that is, muscles that are too weak to perform adequately the function they normally should carry out. Another condition that very closely resembles that of weak muscles, is weak stimulus to those muscles by the nerve. This is usually caused by some injury to that nerve or to a lack of development. However, toxic conditions of the body will also produce a result very close to that of disease.

Of the physiological reasons why visual skills fail to develop normally,

muscular imbalance of the two eyes is the most important. Whenever the eyes are moving from one object to another, there is a temporary suppression of the fovea regions of each eye. This allows the eyes to assume instantly their primary positions in the orbit. If any muscular imbalances exist, either due to an abnormal accommodative convergence tie-up, toxic conditions, or injury at some time, (usually at birth), it makes no difference. The eyes tend to turn in or out, up or down, as the case may be. This then requires abnormal effort for fixation upon the object so it may be seen singly, requiring time, and concentration. The effect upon the visual skills is precisely like that described for errors of refraction. Effort is spent to perform the skill, rather than upon interpretation of the result of the skill's execution.

Although psychological factors may not as often interfere with the development of visual skills as the physical and physiological factors, yet they constitute perhaps the most varied list of causes of such interference. As a matter of fact, they follow almost exactly the list of psychological causes of reading disabilities. They are: Low general intelligence; poor motivation; word blindness; personality disorders; unhealthy home life; reversal tendencies, ocular and manual dominance; and symbolia. Naturally, many more could be added to the list. Such studies occur regularly and each investigator usually finds many additional causes.

We have now covered what might be called a basic introductive outline to visual skills and visual training. You have been given the whys, whens, and wherefores of this subject. We are now ready to enter into the factors of visual skills and training that are of more importance to you as educators and teachers. These are the various methods of investigating visual skills, and the methods of training used to perfect and develop those visual skills.

To investigate visual skills, there are two methods available: Subjective methods; and objective methods. Whenever we use visual phenomena reported by the patient, the method is "subjective." If we depend upon instruments and actual observations independent of what the patient reports, we designate the techniques "objective."

The first subjective method used in investigating visual skills is questioning the patient to find out what his symptoms or complaints are, how long he has had them, how severe the symptoms are, what first brought them on, what general effect the symptoms have had upon him, and his general physical condition. It has been said that most doctors, if given their choice of making all tests known to man, or asking intelligent questions of the patient about his condition, would take the latter. Easily half of the visual problems one will encounter can be diagnosed by intelligent appraisal of the history so obtained from the patient. In any event it is necessary to understand and evaluate all data obtained in other ways.

The second method of subjective examination is by a general eye refraction. It is not necessary to go into much detail about eye examination. In a group of this type all of you have had your eyes examined or watched someone else in the process. Its main purpose is to determine the actual physical error of the eyes, and what lenses are needed to enable the patient to see the best and with the greatest comfort. The techniques used to determine this are many, but the results are the same. Glasses, as such, are prescribed to

allow the patient to devote as little conscious effort and as little nervous energy as possible to the routine act of seeing. In any investigation of visual skills a thorough and complete general refraction must preceed all other tests. It is termed subjective because we are entirely dependent upon the changes in vision reported by the patient when we introduce changes into the physical factor of seeing (changes in the light before it enters the eye).

To determine subjectively the relative strength of the muscles of the eyes, a number of tests are taken. First, the eyes are made to follow an object through the entire range of vision. With the head fixed, the object is moved to the right, left, up, down, and in a circular motion, also brought toward the nose. The limits of binocular and monocular eye motions so tested are then called versions. A report by the patient of seeing the object double at any time can be accepted to indicate that the limit of the versions in that direction has been reached. This established to the examiner that there are or are not faulty muscles, or nerve blocs that prevent the establishment of visual skills or prevent the successful training of visual skills. Much additional information can be gained from this simple test, but it will be brought out under the objective phase of testing visual skills.

After the ability to rotate the eye adequately is established, three additional muscle tests are taken using Risley prisms. Their construction is such that the prism power can be either increased or decreased smoothly and at the will of the operator. The eyes are fixed upon a point first at distance then at near, and the power of the prism increased. The eyes follow the displacement of the image, until they can no longer follow the object and therefore see double. The power is then reduced until the eyes recover single vision. The results are called ductions. Usually the test is repeated three times, making the eyes turn first in, then out, and last up and down. It is scored as the break over the recovery. It is important to us, because any excessive lowering or raising of these ductions either individually or collectively is indicative of an interference in vision, and will find its counterpart in the loss or impairment of related visual skills.

One of the most important of the visual skills is the binocular use of the two eyes. Therefore, it is necessary that we constantly be assured that both eyes are being used equally. Occasionally, we find the eyes, instead of being used together, are used alternately. Yet, those eyes to all appearance may seem to be focused straight ahead. This is accomplished by mental suppressing of the image in one eye.

Suppression is divided up into various grades. Total suppression of one eye with the other doing continually and constantly all the fine detail of seeing. Alternating suppression obtains when one eye sees for a time, then the other eye. However, the most common phase is partial suppression found in cases of impairment in binocular visual skills, or when the strain in performing the binocular skills becomes too great.

The investigation of suppression is usually by two methods. First and simplest is a plain red glass filter. The eye is directed toward a small white spot of light at any desired distance. The red glass is placed over one eye. Then, if both eyes are functioning equally, the light will be seen to be a pinkish white. Just white or just red is a sign that suppression is taking place.

A more exact method is available by using a stereoscope. In this test, two halves of a picture are presented so the combined image is a completed picture. The patient reports what is being seen and any omission is evidence of suppression. A simple test is the ring and star test. In this test, a small star is presented to one eye, and a larger ring is presented to the other. The object, of course, is to place the ring around the star. When this is done, any suppression shows up by the star being missing or parts of the ring not being seen. Sometimes, the entire ring will be gone. Various grades are determined by asking if the missing portions are gone all of the time or seem to fluctuate.

Depth perception is important to the investigator, because it is the highest development of the original visual skills needed by man, barring, of course, specialized occupational and recreational needs. The only method by which it can be investigated is subjectively. This is done by having the patient tell the examiner which of two objects appears closer. This can be done by actual measurement or by stereometric cards used in a stereoscope. The Howard-Dolman test is an example of the first. Two rods, one fixed, the other controllable by the subject, are presented to his vision. The purpose of the test is to have the patient line up the rods one along side of the other. The actual error in judgment is measured by the distance in millimeters between the two rods.

When measured in a stereoscope, cards are used which present characters requiring varying degrees of convergence. Thus, through kinesthetic clues, the mind projects one object to a greater distance than the other. The more the eyes converge, the closer the object appears. This is the basis of all stereoscopic pictures viewed with a stereoscope and duplicates the sensations of viewing objects in space.

Fusion, like suppression and depth perception, is another visual skill that must be investigated subjectively. Measurements of this visual skill are made similarly to those of suppression, with the red filter glass or by the stereoscope. The technique is about the same except that additional observations are made. First, of course, is the pinkish color of the light. Second, we can inquire if the patient sees two lights, one completely red, the other completely white. An answer of this kind indicates complete lack of fusion. However, it is possible that the patient may see the light pink for a short time, then it may separate as the fusion faculty becomes fatigued. Thus, various grades of fusion become apparent.

When measured upon the stereoscope, the patient fuses two similar pictures. One has on it a small horizontal line, the other a small vertical line. They are so placed that if fusion is perfect, they will form a perfect cross. Any displacement is judged by the position of the horizontal line in regard to the vertical, and is evident of the grade of fusion. For example, if to the patient, the picture appears fused, yet the cross is lopsided, then it is indicative of a low grade fusion. Fusion is usually measured both for distance and near.

Objective methods of determining visual skills are usually taken after the subjective methods have been completed. This procedure is followed because the patient gets a little training as he goes along. His response to directions becomes increasingly accurate. Consequently, better results can

trying to do. Objective methods, you will remember, are those methods by which we get our information from actual observation and measurements without depending upon the judgment of the patient. These are more important in small children than in adults, who have been trained to give their own opinions. Children will often tell you what they think you want to hear. Consequently, an effort is constantly made with children to keep our investigations completely objective.

It is possible to determine the exact error of the eye by observing the shadow cast by a light moving across the eye. This error, so determined, will usually be practically the same as that found subjectively with trial lenses. In young children this determination of the eye error is used in prescribing glasses to a greater extent than the subjective refraction.

In muscle tests it is possible to observe the motion of the eyes. Through this technique a paralysis or deviation of any muscle can be noticed. Also important in observation is jerkiness in any part of the field of rotation. In determining muscle strength we can watch the eyes and see when they cease turning in or out or up and down, and also observe when they recover the image. This is not easy to do and is not as exact as the patient reporting double vision. However, in young children, it is the only accurate method.

Fusion and depth perception are impossible to measure objectively, as they are truly psychological phenomena. They are essentially psychic blending of the two images formed by the impulses transmitted to the brain.

The above has been merely an outline of the various methods generally used in determining the fundamental visual skills. As you can realize, these visual skills are the building blocks from which all other visual skills are fashioned. Each of the advanced visual skills, such as reading and many others depend upon combinations of these for their execution. Consequently, for each visual skill, there is an elaborate series of tests that can be made in addition to the few that have been outlined. They are, however, just a recombination of these, made more complicated or exact in order that special information may be derived from the test. Mention of these, particularly in regard to reading, will be made later. The general tests already discussed are certainly landmarks. From these, we can determine what to do next or possibly what the trouble is.

The instruments used in investigating visual skills are few, when one considers the number of visual skills. Most essential is the stereoscope. The Brewster stereoscope and the Wheatstone stereoscope are two types. Most people are familiar with the Brewster type. It has two prismatic lenses separated by a diaphragm. The stereoscopic cards are observed directly by the patient. The Wheatstone type may be a little strange to you. The targets are placed at right angles to the patient, and he sees them reflected in two mirrors placed at an angle of forty-five degrees to the eyes.

Either instrument can be used for anything that the other is used for. However, due to mechanical construction and ease of operation, it is usually found that diagnostic work can be performed better upon the Brewster, or regular type, stereoscope; and that visual training is more satisfactorily executed upon the Wheatstone stereoscope.

Used with the stereoscopes, of course must be suitable cards or targets. These are readily obtainable in endless variety and for any purpose. In fact, if one has a particular problem, or something he wishes to investigate, the producers of the stereoscopic cards will either supply suitable stereograms or have them made to fulfill his needs. The art of making stereograms is an old-time skill. Regardless of the visual skill you wish to test, you will find already prepared many different cards or series of cards that will test the same function. It has been stated that the stereoscope is to the eye doctor what the stethescope is to the medical doctor.

With the stereoscope, a few trial lenses, and two variable prisms, one can therefore do almost all basic testing of visual skills. In fact, probably 99% of all investigations of visual skills are carried out with just such apparatus. For the complete job, however, one must have one more piece of equipment. This is the eye camera, called the ophthalmograph. This instrument actually takes a picture of the eyes while in action. It faithfully records all starts, stops, jerks, twists, and all other possible eye motions, and the visual skills with which those eyes are operating. It is our greatest aid in the correcting of reading difficulties.

The eye motion camera is a development from physiological optics. At the beginning, eye motions were observed directly through a telescope or a peep-hole in the material being read. Later, mechanical recording devices attached to the eye or eyelid, recorded upon smoked paper a graph of the eye motions. Microphones have been attached to the upper eye lid so that the motion of the eyes could be counted by listening to the sounds. The difficulties of these methods can be readily understood. It was not until the advent of photographic film that a simple way of recording the actual eye motions for diagnosis and study presented itself to the investigators of visual skills. As would be expected, the difficulties in developing such apparatus were tremendous. Many techniques were tried and discarded. True progress was not made until motion picture film became generally available and completely understood.

All eye motion photograph is now taken on a moving film. A bright light is focused first upon the cornea of each eye. The reflection for the corneas is then brought to focus upon the film. As the eyes and the film move, each change of eye position is recorded, and a continuous picture is made available for accurate measurement and exact diagnosis.

The last form by which we test visual skills is completely psychological. They are the various forms of psychological tests devised to give us information as the interpretive phase of vision. As these are completely familiar to you, we shall only give related examples. Common types are the reading tests designed to measure ability, speed, and comprehension. With these we can get an almost perfect picture of what is lacking in the person's reading ability, and often the answer as to just what should be done to correct it. Under this classification are the various types of tests used to determine color vision. Various methods are available. Sometimes the patient is asked to determine the color of yarn. At other times he is instructed to pick out a number composed of one-color dots, while the background is made of the complementary colors. The latest methods used to test color vision are dependent upon the after images of color. The patient's gaze is directed to a blank square surrounded by various colors after he has gazed at one color for

a short time. He is then asked to determine which color his after image most resembles. This is the closest approach to a truly satisfactory test, as it completely eliminates the factor of memory or association with past experiences. It more exactly measures the true condition at the time of the test.

When we know why and in what way a patient is deficient in visual skills, our next job is to correct those deficiencies. This is accomplished by visual training. Visual training comes under two classifications, personal or uncontrolled, and supervised or controlled. The uncontrolled methods are used when the reason is minor. Improper posture or lack of practice are such reasons. When using this method the patient is merely advised what to do and then left to himself to do it. He corrects his deficiencies by repeated efforts, until he overcomes his difficulties or develops a substitute that will serve his purposes.

In most cases, the use of personal training is impossible. Due to necessity for correcting first basic errors that have been built up by the patient over a long period of time. This requires elaborate instrumentation, long patient hours of encouragement, and a supervised scale of accomplishments. By this, the patient is led to the constant total exertion of his ability. As his ability grows in response to the training, then the difficulty of the work is increased.

To discuss controlled training, one first must realize that whenever visual skills either fail to develop or develop faultily, the effect upon the basic units that have been discussed is the same. In fact, it is the failure of these basic skills to function properly that cause the higher visual skills to be faulty. It matters little what causes the failure to read properly, the sequelae as recorded by an eye motion camera is the same. Therefore, it is necessary to always back-track and begin by correcting the most basic visual skill that is not functioning properly. Then it is possible to rebuild until the patient is brought to the point necessary for comfort and efficiency.

One of the simplest types of training and one which absolutely prohibits the child from doing any type of close work is the loss of the ability to accommodate, that is adjust the focus for various distances. To train this, we first correct any errors of refraction that may be present. Each eye is then trained to see an object clearly through concave lenses. These are gradually increased in power. When this can be done easily by each eye, the power of the total minus is reduced and the eyes made to look at the object binocularly. As the patient gains in ability, the power of the concave lenses is again increased. When normal ability for the age of the patient is reached, the artificial practice is stopped, and the patient's attention is directed to a near-point object. He practices bringing this closer and closer until the function is completely normal. This can usually be accomplished in two or three weeks. Although, if the error is caused from a serious illness, then the recovery time is somewhat longer.

To correct muscular imbalances or cases of actual deviations of the eyes, we first must go back and correct the tendency to suppress the image of the deviating eye. This is done by first monocularly flashing a abright light into the suppressing eye. Later, this is replaced with a steady light. Then large targets of gross detail are substituted. As the vision becomes more acute, the detail of the targets is made finer and finer. When the visual

acuity is high enough, then the patient is taught to be aware of double vision. That is, to appreciate that there is an impulse from each eye, even though it is not fused. The two objects are then brought into fusion by means of prisms, and the eyes are made to move while still holding this fusion. Little by little as the patient is able, the deviation of the eyes is reduced by lessening the amount of prism the eyes are looking through. This is continued until the patient is able to hold single, simultaneous, binocular vision with no artificial help from the instrument. The treatment then becomes the same as for overcoming muscle imbalances. The patient is given an amplitude of the impaired muscles large enough to overcome any tendencies for the eyes to deviate.

When this is accomplished, half of the battle is over. The next part is in attempting to get the patient to transfer the skills he has learned upon the machine to normal real-life seeing. This is done gradually and with constant attention to the possibility of regressions. Instruments that more and more closely approximate methods of seeing are used until at last the patient is able to look the word in the face with a straight eye, and no artificial help.

Depth perception is relatively easy to train as it is one of the most recently developed of the visual skills. Providing the primary habits of clear focus, fusion, and no suppression are functioning normally, it responds rapidly to training. Usually, we begin with the most obvious stereogram card in which the patient can recognize a marked difference in depth. If he is so poor that he can tell no differences, they are pointed out to him. Gradually the apparent differences between the distances of the objects is reduced as his kinesthetic senses become more acute. When he reaches normal upon the instrument he is then tried out by actual judgment with the Howard-Dolman test. If he passes, he can be dismissed as cured. If not, then further training upon the instrument is necessary until he is able to pass the test. It is usually wise to check upon the patient by having him actually judge differences between objects at different distances (such as two automobiles, etc.).

Color vision is at this time a subject of great controversy throughout the eye world. Many claim that they can cure color blindness by visual training. Others claim that they are merely training the patient to pass the various tests for color blindness, but not actually improving the basic color sensitivity. For your information, the technique is that of training the eyes through filters of the same color in which the person is deficient. This is accompanied by large doses of Vitamin A to assist in the rebuilding of the retinal tissues and substances. Much interest has been stirred in this phase of visual skills due to the entrance requirements of certain branches of the service. However, as yet there has been no statistical survey of claims published. So, officially, the technique must be classified as doubtful.

For our example of the more complex types of visual training, we shall present one with which you are all familiar; namely, reading difficulties. Perhaps the hardest thing to correct in any case of reading difficulty is the attitude of the parents.

In any consideration of reading difficulties, first a diagnosis must be made. This is accomplished by the use of the various psychological tests already discussed, and with which you are familiar. When these have been taken

and analyzed, the history of the case is taken to determine how long the condition has been present and when it first made its appearance. This usually will give a clue to the basic reason that caused the difficulty.

Next, a record of the eye motions is made with the eye camera. These give an actual picture of the trouble and the attempts that are being made to overcome it.

The actual correction of reading difficulties is exactly the same, regardless of the original cause. Whatever that cause was, the effect upon the visual skills are the same; poor reading.

We first eliminate all eye errors and muscle imbalances by glasses, or by preliminary visual training where that is possible. Also any of the primary visual skills that may be deficient, are brought up to normal. When this is completed, we are ready to go ahead with the process of building up the complex visual skill of reading.

Our first step is the training of the patient in the proper eye habits. This is done on the metronoscepe, essentially a pacing device. This instrument is so designed that materials can be presented to the individual a word or line at a time. At the beginning the extreme left window opens for a short time, and as it closes the next window opens, and so on across the page. As the patient becomes more proficient, the speed of presentation is increased and more words are presented at each window. This training is continued until the eyes are trained to move evenly, quickly,and with accurate fixation, no tendency toward regressions, and with adequate span of recognition. The arrival at this point is determined by means of the eye camera.

The purpose of these steps is to have the eyes in such condition that the act of just seeing will be as habitual and as mechanical as possible. In other words, the patient will need to devote no conscious attention to the mere act of seeing. When this is completed, we are ready to go on to the training of the interpretation of the visual sensations.

Depending upon how retarded the patient is, we go back to material he can easily understand and master. Assuming we must start at zero, we would begin with a roll that contained pictures flanked to either side with the word normally associated with that picture. This is continued until a sufficient vocabulary has been built to enable the patient to understand the simplest stories.

These are, of course, in very large print and with only one word to the window of the metronoscope. The patient reads aloud with the machine going slowly enough so that he can easily keep up with the story. As the patient increases in ability, the speed of the machine is increased. When sufficient progress has been made, the difficulty of the stories is increased and the number of words per window is increased, and the size of the print is reduced. Each time the difficulty of the material is increased the machine must be slowed down so as to give the patient adequate time to conquer the material.

During this phase of training, the patient is constantly tested for comprehension, as well as his eye motions checked on the ophthalmograph. A

list of the words missed or stumbled over is kept to be given to the patient as home work until the next visit. At that time he is retested upon the missed words. Eventually, the patient will reach the limits of oral reading and then it is time to go on to silent reading. To do this, the above procedure is followed but with careful attention to the elimination of silent lip motions. Now, the emphasis is placed upon smooth and proper eye motions with high comprehension rather than upon speed. Invariably, the patient's speed will come up if he thoroughly masters the basic fundamentals.

When the training has brought the patient up to the level of ability normal for his age or intelligence, he is switched from the instruments to books slightly below the level he has been accustomed to upon the machine. It is usually found that he can handle these with a minimum effort and a maximum of comprehension. The difficulty of the books is increased until he has reached a point slightly above his particular normalcy. This is done to take care of the slight slip-back occasioned when the training is stopped. Usually, however, we have the patient return for progress reports at regular intervals. At these times he is given again the various psychological tests that measure reading ability and comprehension, as well as being retested with the eye motion camera. If he continues to progress normally over a period of one year, then we consider him cured.

In working with visual skills, we have at our command a very elaborate series of instruments. Usually, each one is designed to do one specific purpose. It is necessary to be continually switching the patient from one instrument to the other if satisfactory results are to be achieved. The requirements of a general all-around instrument for visual training would be (we have already covered diagnostic instruments): 1. Variable accommodation. 2. Variable convergence. 3. Electrical attachments that allow the lights to be flashed monocularly, binocularly, and alternately. 4. Motion both in a circular and meridional patterns with the angular swing of each variable in amount. 5. Interchangability of targets. 6. Similarity to the use of the eyes in normal seeing.

In conclusion, I would like to outline to you the various results that we are able to accomplish by means of visual training. Remembering that work in this field is comparatively limited to recent times, and that much is left to be done, I still feel that some of our accomplishments are just short of miraculous.

By training the accommodation or refractive stages of vision, we are able to reduce or control near-sightedness in a majority of cases. We can improve the vision over existing errors by the proper training of interpretation of what is being seen. To prove this, we have the records of thousands of men who, by these methods, have been visually reconditioned and enabled successfully to pass the eye tests of the armed forces. A pamphlet that describes this in detail is called Grounded Eagles Fly Again, obtainable from the magazine, Vision.

By training squint, the muscular imbalances in many cases, the eyes can be straightened or be made to balance without resorting to surgery. If the surgery needs to be done, then our techniques facilitate subsequent training of the person to use his eyes as they wer meant to be used. It also prevents

the reoccurence of the deviation of the eyes, or the tendency of the eyes to deviate in the opposite direction, a possible sequel to surgery.

By training color vision, we can show definite improvement as reported by the patient in his world of greys. Many people, for the first time, are able to appreciate a sunset as the array of brilliant colors it is, rather than just dark clouds. We can train them to pass all standard tests of color vision. This also is covered in the pamphlet, Grounded Eagles Fly Again.

By training depth perception, a person can be made to judge distances more accurately, and trained to pass tests of depth perception. He is better equipped to handle himself in this world of fast moving cars and airplanes.

By various specialized training to visually equip a man to handle his particular job, we can make a better and safer workman of him, and increase the joy of living by eliminating visual fatigue and leaving him able to relax after he finishes work.

By training, we can eliminate, in most cases, and greatly help in others, reading disabilities. Our results in this field seem to depend upon the general intelligence of the person. In most cases, satisfactory results can be shown in a few lessons, with the patient recovering his normal grade level in two to four months. It has been found that if we can give to the patient basic habits permanently and correctly formed, the patient will then continue by normal self-practice.

How far this field will continue to progress, we do not know. In practice it is usually impossible for the average practitioner to work with much training of visual skills. Lack of equipment and definite routines, plus the fact that much of the developments in this field are not known outside of the laboratories and clinics set up for the purpose, tend to limit the eye doctor to those errors that can be corrected by glasses.

Many men have the equipment for simple muscle training, but in general it lies unused due to the length of time needed for correction and to the spotty results obtained by the inexperienced operators. In addition to this, we have the reluctance of people to accept anything new.

However, as new men enter the field of eyesight conservation and visual efficiency, they will be educated to prevention and its importance, rather than correction after the damage has been done. At that time, we will be able to give to the schools, who in turn will be able to give to the students, methods of visual education that will insure the proper developments of those visual skills needed to face civilization as we know it today.

IMPROVING READING COMPREHENSION

Reuben R. Palm, Director of Secondary Education, Los Angeles County Schools

In high school one of the most serious problems teachers confront is that of helping students to read with understanding in the various subjects that are taught. I say subjects, because that is the way most high school teaching is organized.

The problem of getting the student to understand what he reads is not necessarily the same in all subjects. Frequently the student may comprehend his history reading quite well, but not his science, or mathematics. Therefore, the problem of helping the student to comprehend what he reads, is an every teacher responsibility.

Though the methods of developing reading comprehension vary in certain respects for each of the major high school teaching subjects, the principles of developing reading comprehension are in most respects the same throughout all of them.

In general the problem of helping high school students to read with understanding has three aspects:

1. The student himself.

Comprehension is dependent to a considerable extent upon the student's mental capacity and maturity, upon his previous background of life experiences, and upon his purpose or interests. These factors are within the reader and usually not well understood by either the reader himself or the teacher.

2. The reading situation itself.

The conditions, the environment, or the circumstances under which the reading takes place also enter into the problem of reading comprehension. The style, the concepts, and vocabulary of the material read; the presence of auxiliary aids and tools such as dictionaries, encyclopedias, atlases, maps, charts, and pictures; opportunities for obtaining concrete and sensory experiences through field trips or a chance to see, hear, or feel the thing that the student is reading about; the room, the teacher, and the circumstances under which the reading itself is done; all these factors and many others are involved in obtaining meaning from what is read. All of them are outside the reader, therefore more obvious and subject to control by the school than are the factors within the reader.

3. The reading procedures and techniques used by the reader.

Though it is the reader who utilizes these procedures and techniques, it is to a large extent the teacher who is responsible for training the reader in how they are employed.

The first of the three aspects of the problem of reading comprehension, namely, the nature of the student himself, involves several factors. One major factor is his mental capacity or intelligence. Irion's study of ninth grade students and their reading comprehension of such selections as

Cooper's	The Spy
Byron's	The Destruction of Sennacherib
Shakespeare's	Julius Caesar

showed that these pieces of literature were beyond the ability of students having intelligence quotients under 100 to comprehend. Yet in my annual itinerary of classroom visitations I find many teachers trying to teach Shakespeare to ninth grade students by having them read Shakespeare first hand. Recently I observed a young man who had a low ninth grade group with I.Q.'s from 75 to 90 attempting to teach them Macbeth. His methods of teaching were very conventional except that he sat on top of a big dictionary on top of his desk. From the nature of the questions he asked of the pupils and the answers that they gave I felt that their reading Shakespeare was not a fruitful experience for them.

This is not to imply that Shakespeare cannot be taug t to low I.Q. pupils with some degree of comprehension, but I contend, it cannot be done through conventional methods of reading, such as I generally observe during the course of my visitations. It may be possible for low I.Q. pupils to get some comprehension of Shakespeare through use of films, recordings, pictures, dramatization, and related historical teaching, but not merely through reading Shakespearean classics directly.

Another factor over which the student has little more control than he has over his native intelligence, is the kind of past experiences he has had. These determine to a great extent the student's ability to comprehend what he reads. Many students' experiences have not been of a type that enable them to comprehend what they read. For example, a student who lives on the seacoast of Alaska has a better background generally for understanding a sea story than does a student who lives in Wyoming. Similarly a student living in Wyoming has a better background for understanding a cowboy story than does a student living on the Alaskan islands who has never seen either a horse or a cowboy, or ridden on anything except a motorboat. A teacher on one of the islands six years ago went down to the wharf one day where he saw some boys sitting astride of gasoline barrels. He asked them what they were doing, and one of them answered "Playing bronco. Gidap! Gidap! Putt, putt, putt, putt." Now that boy's comprehension of a bronco as derived from his reading certainly was not one the author of the book intended to convey.

The lack, therefore, of certain types of experiences prevents many students from comprehending fully what they read. This is particularly true of students who have travelled very little or have lived confined and sheltered lives. Where experiences necessary for comprehension are lacking the school and the teacher must in some way arrange to provide them. Lack of experience to understand fully what is read does not necessarily prevent the student from enjoying what he reads. The boy on the Alaskan island probably enjoyed his reading because there was enough movement, charm, rhythm, emotion, and feeling in the author's style for him to enjoy what he read even though the comprehension of the bronco that he derived was faulty.

An inadequate vocabulary for understanding what is read is another important factor in comprehension. Especially is this true of students from homes and communities of low social-cultural status where the vocabulary used is not that employed by writers of books. In such cases teachers need to help pupils to acquire sufficient vocabulary to comprehend what they

read, or to find books with vocabularies more nearly within the reader's scope of experience and level of understanding.

It was on this point of the importance of the relation of the reading material and vocabulary to the student's experience that John Dewey in an article written forty-five years ago deplored "The isolation of material found in books, from the material which the child experiences in life itself...(as being)...an unnatural divorce which cannot have any other result than defective standards of appreciation, and a tendency to elevate the sensational and transiently interesting above the valuable and the permanent."

Referring again to the incident of the little Alaskan boys who from their reading about broncos thought they were something like motor boats, at least in the kind of noise they make when they travel, you can see how influential the past experiences of the reader are in determining his ability to comprehend what is read, unless something is done through proper teacher guidance to help the reader to supplement the experience that is lacking.

Many other factors within the reader affect comprehension, but I will mention only one of them, and that is the reader's purpose or interest. Too often what the student is required to read has little or no relation to any recognized purpose of his own. He will comprehend much more readily if what he reads is related to a basic purpose or interest. Interest and purpose serve as a driving force that will cause the reader to look up the meaning of words he doesn't understand, will ask questions of others, or will seek further reading material that is likely to satisfy his purpose and interest. If interest and purpose is lacking, the teacher must try to develop it for the reader before she can expect him to read with much comprehension.

The second aspect of the problem of reading comprehension, consists of <u>factors outside of the reader</u> and over which he may, or may not, have some control. One factor is the reader's study situation. I entered a classroom recently in which the teacher said, "The class is studying for the rest of the period. I wish you had come earlier so you could have heard the discussion." I said, "That is alright because perhaps you will tell me what you and your class have been doing this semester." During the twenty minutes I was there, many things happened. Twice the principal's voice came in over the broadcasting system to make some announcements. Several times monitors came in with slips to summon certain students to the attendance office. Two students came in to make announcements about the warstamp and bond sale. Outside a noisy power lawn mower went by periodically. A teacher came in to ask for volunteers to assist at a P.T.A. meeting and tea. In addition there was my presence which interfered with the teacher's opportunity to guide the study of the pupils. As a result I have an idea that most pupils derived little comprehension from what they read during the twenty minutes. Such reading situations are altogether too common in many of the schools that I annually visit.

Another factor beyond the control of the reader and which affects reading comprehension, is the author's style and the reading difficulty of the material read. Some years ago Ruhlen conducted an experiment in which out of a first reading of L'Allegro ten out of a class of thirty-four had no idea of what it was about, three got the idea of mirth and happiness (as contrasted with melancholy), and fourteen others did not understand it and disliked it.

Even after two hours more of study which included the reading of supporting Greek myths, less than half comprehended what they had read. A teacher needs to do much to help pupils if they are to comprehend literature with so much figurative language, and mood, and tone.

A third factor is how the teacher gives out the reading assignment. In too many cases students are not helped to see the purpose of the assignment as related to the reader's own problems or interests. He is not given suggestions concerning what to look for, or how to look for it. He is not asked to draw any particular inferences or to find arguments for or against a given conclusion. Thus, poorly motivated and directed, little comprehension is derived from the reading experience.

Many teachers purposely refrain from giving any reading guidance and directions, on the grounds that it is good for pupils to dig out the facts for themselves. Occasionally this may be justified, but as a daily practice it is not. Digging out meaning for oneself without teacher guidance is an adult task, far too difficult for average adolescents.

A fourth factor of comprehension is the availability to the student of reading and study helps. One dictionary in the room is not adequate, nor even several, if they are put away in a cupboard. An encyclopedia, a thesaurus, a book of synonyms and antonyms, an atlas, several maps and other readily accessible reference materials are very essential if the student is to be enabled to develop proper comprehension. I am quite surprised sometimes during the course of my visitations to find how many of these auxiliary reading and study helps are not available to pupils. It isn't that principals do not supply them in all cases, for often I see them put away neatly in cupboards or lying underneath other books and materials indicating that they are not used.

A third aspect of the reading problem involves the procedures and techniques used by the reader. These are usually the result of school instruction, or lack of it, as the case may be. Whole books have been written on methods and techniques of reading. At this time only a few of those basic to development of reading comprehension can be discussed.

One factor is the question whether the reader should do a single reading of a certain exercise, or whether he should re-read it. According to Ruth Strang the experimental evidence on this question is inconclusive. It probably depends on the nature of the material to be read as well as the reader himself.

Another factor is the question whether for sake of comprehension it is best to read from one book intensively, or to read extensively from several books. If it must be a case of either-or, experimental evidence is somewhat in favor of extensive reading. For best comprehension, probably a combination of both methods is desirable, first a careful reading of a basic text, and then extensive reading of several related references.

A third factor relates to the question whether the reader outlines what he reads. Again experiments are inconclusive, the outcome depending probably on the nature of the material read and individual differences in readers. Consensus of opinion is that outlining is of more value to immature readers than

to those more advanced.

A fourth factor is the question of proper eye movements. The good reader uses few fixations, rarely makes a regression, and hits the beginning of each new line accurately. Presumably a reader can be helped to develop proper eye movements, but competent opinion is that eye movement patterns do not cause, but rather are symptoms of something else that is at fault. Perhaps the material is too difficult or above the ability of the reader to comprehend, or perhaps his vision is at fault.

A fifth factor is knowledge of paragraph mechanics. Knowledge of paragraph mechanics aids comprehension because it enables the reader to know where to look for central ideas, for supporting details, and concluding statements. Knowledge of grammar and rhetoric is helpful if the reader has intelligence enough to grasp the principles. But to teach formal grammar and rhetoric to all students with the belief that they will be enabled to comprehend their reading better is not a safe assumption to make.

A sixth factor is the amount of free reading done by the student during unscheduled moments. Assuming that the student receives encouragement and subtle guidance free reading is helpful in providing the student with a wide background of information that will facilitate comprehension in many types of work reading.

Improving Comprehension in Various Subject Fields

Up to this point the discussion of the problems of reading comprehension have been confined to general principles. However, each teacher in the high school has certain reading problems peculiar to each particular subject that she teaches. In the field of mathematics for example there are six factors in reading with which teacher and student need to be especially concerned. They are:

1. Reading to follow directions
2. Reading to understand definitions
3. Reading to solve problems
4. Reading to understand principles and apply them
5. Reading to understand and interpret graphs and tables
6. Knowledge of mathematics vocabulary and symbols

The six types of reading facility needed for reading comprehension in the study of mathematics do not automatically result from the training provided in English or reading classes. Yet many high school mathematics teachers seem to go on the assumption that they have no responsibility for the teaching of reading.

Georges studied junior high school students who had difficulties in mathematics and found that twenty-three percent had reading difficulties involving vocabulary, fourteen percent involving symbols and notations, and twenty-one percent were unable to read well enough to grasp fundamental concepts. The vocabulary knowledge and understanding of symbols necessary in reading of mathematics instructional material is very great. Kunkel in his study of the vocabulary of high school algebra found that the number of different mathematical words or phrases in any single textbook ranged from 545 to 1687

in elementary books and much higher in advanced algebra. This places a heavy reading demand upon the beginning algebra student. In addition to the large vocabulary and knowledge of symbols needed, the beginning high school student in algebra must be able to read closely knit explanations, directions, and definitions presented in a minimum number of words which are highly denotative in character. Compactness particularly distinguishes the language of mathematics from that of subjects like English and the social studies.

One writer (Will Scarlet) in commenting upon the reading problems peculiar to mathematics criticizes the authors of the textbooks for their verbalism and abstruseness. He says,

> "To a great extent, the materials of instruction are still expressed in a dusty verbalism smacking of classical tradition. ...in many mathematics textbooks, an expressional style is employed which serves as an obstacle to pupils' understanding. This language barrier has no connection at all with the various computational processes. ....retarded readers...are confused when they come upon expressions such as the following:

The latter	Corresponding	Simultaneously
The former	Respectively	Consequently
Diminished by	Successively	Exceeds
Combined capacity	Accumulative	Ascending order
Prime factor	Units	

"Pupils likewise reveal confusion when they are asked to deal with problems which are phrased in that strange patois which has become habitual with writers of mathematics textbooks. I offer a few examples:

1. A number increased by 10% of itself equals ----
2. The square of the differences of two numbers is equal to the square of the first number, minus twice the product of the two numbers, plus the square of the second number.
3. To factor an expression means to find one or more expressions whose product is equal to the given expression.
4. The base of an isosceles triangle is extended in both directions.
5. If one side of a triangle is extended, the exterior angle thus formed is equal to the sum of the two remote exterior angles.
6. Three more than twice as many.
7. Six less than three times as many."

Because most mathematics textbooks are so difficult to read every mathematics teacher has the responsibility of devoting some portion of class time to helping students to meet the reading problems that are occasioned by the special form and content of her subject. This implies that she must take time to study each of her pupils to find out in what reading skills each is weak. This means the need for careful observation of the students as they prepare their work, and some use of reading tests. Also perhaps the preparation of some special reading exercises or lessons.

It may be argued that a good mathematics teacher does not need to use a textbook, thereby obviating the reading problem. I knew a general science teacher who did that once for a year or two, using lectures, demonstrations, and films almost entirely. Also in my classroom visitations I occasionally

run across teachers who say that they do not use mathematics textbooks and so their pupils have no reading difficulties. If mathematics skills can be taught that way, well and good, but what about the student who in his reading outside of school and in adult life encounters reading problems in mathematics? Is he likely to be able to read well enough to solve them if he had no reading practice and training while in school?

Time does not permit discussion of development of comprehension in reading in the other subjects in the high school but each subject has its own peculiar reading problems. Therefore, the responsibility for helping students must be accepted by the teacher of each subject whether the subject be mathematics, science, history, English or music.

PROBLEMS IN VISUAL RE-EDUCATION

Mildred A. Parkins (Mrs. Geo. A., Jr.), Glendale

Visual training is merely a matter of conditioning the reflexes of the eyes. Conditioning the reflexes so that the sweep of the eyes along the line of print will be smooth, synchronous, rapid, and with the fewest possible pauses. It is assumed that reading, or the brain's interpretation of the visual impression takes place only during the pauses. We know that in reading the eye moves along each line of the printed page in a series of jumps with intervening pauses. From the end of one line to the beginning of the next line a long backward movement is necessary. But the eyes sometimes make backward movements within the line. These backward movements are called regressions. These regressions may be compared to the repetitions of words or phrases by an unskilled reader in reading aloud. If repetitions are tiring to the listener how much more fatiguing they must be to the reader!

There are two types of regressions; educational and visual. The educational regressions comes from lack of skill in the technique of reading and lack of vocabulary. A child in the third grade is expected to make many more regressions in reading sixth grade material than a child in the sixth grade. The visual regression is caused from a fixation difficulty of the eyes. The American Research Council of Optometry directed by George A. Parkins, O. D., has developed a means of improving this fixation difficulty.

It all began this way: in 1933 Superintendent Millard D. Bell, of the Ord (Nebraska) city schools, and George A. Parkins set out to make a thorough study of the eyes of school children and visual factors which might affect their functioning. Dr. Parkins wanted to know just what the children's visual problems were. Superintendent Bell hoped to find out why there seemed to be no correlation between visual acuity and either discipline or scholarship. They made careful study of the visual functionings of each child and of the lighting of each classroom and acquired some 35,000 items of visual data on 700 students. Careful analysis of this data revealed two very important facts.

First: <u>That the seating of students should be so arranged that the windows are at their backs only, not from the left or right</u>.

"It became apparent early in our work,[1] that the seating of the students in the different rooms was not arranged to give them full advantage of the supply of natural light that was available. It was realized that due consideration must be given in each room to the actual physiology of vision, as well as the actual physics involved in the transmission and reflection of light in that particular room. Considering the physiology of vision involved in our problems we find that vision is produced by light rays, reflected from the object of regard, into the eyes. These light rays first encounter the cornea where they are refracted. Then they enter the aqueous humor where they are further refracted. From the crystaling lens through the vitreous humor being further refracted just enough in the normal eye, to come to a focus on the retina. These rays of light brought to a focus on the retina, irritate the rods and cones of the portion of the

1. The Effectual Use of the Available Supply of Natural Light Studied in a Research in the Visual Problems of the Students in the Ord City Schools, conducted by George A. Parkins,O.D., and Millard D. Bell, Supt.,pp. 1-4.

retina and in turn, the rods and cones involved, relay that irritation of the visual centers of the brain, resulting in vision. The amount of light entering the eye is governed by the action of the iris controlling the size of the pupils of the eyes. The normal action of the iris is to contract, producing a small pupil when exposed to an excessive amount of light. This reduces glare, and results in clear, distinct vision. When exposed to a dimmer light the muscles of the iris relax producing a large pupil and allowing more light to enter the eye, and again producing clear, distinct vision. The iris responds to the surrounding light as well as to the light reflected from the object of regard. That being the case, to produce comfortable, efficient vision, equal, or even greater intensity of light must be reflected from the object of regard than surrounds the eye itself."

Summarizing the physics involved we find: "The angle of reflecting surface at an angle of 90 degrees, will be reflected directly back in the direction from which it came. If the light emanating from a source 45 degrees to the right of a reflecting surface impinges on that surface, it will be reflected at an angle of 45 degrees to the left." With these normal physiological reflexes and laws of physics in mind, we considered first,

Room A

In this room the windows are all in the east and the students were seated facing south. The direction of the light source in the mornings was from the east and slightly from the south. In the afternoon, the light source was such as was reflected from surrounding buildings, trees, and dust and moisture particles in the air. It could well be considered as coming from the east.

Using a photometer, we found that the students' eyes were exposed to light intensities running up into hundreds of candle power both mornings and afternoons. The result was an excessively small pupil adapted to high intensities and reflected from the object of regard. Placing the photometer on the desk in an upright position, such as a book might be held upright, it was found that there were less than twenty foot candles of light that would be reflected from the object of regard. This held fairly steady throughout the day. Now the photometer was placed flat on the desk in a position comparative to a book lying flat on the desk. The reading was 30 foot candles at noon, and decreasing from then on to seven candles power at 4 p.m. There was sufficient reflected light for comfortable, efficient vision if the eye itself were not exposed to the higher intensities. That resulted in a pupil adapted to the higher intensities. Considering in light of the law of reflection, the light during the morning strikes the paper lying flat on the desk at angles varying from 20 degrees early in the morning, to 70 degrees near midday. It is then reflected to the opposite side the same amount. Only that light reflected from suitable, arranged irregularities of the paper was being reflected into the eyes and made available for vision. A comparative situation exists in the afternoons. Should the book be held upright, only such light as has been reflected from the walls of the room, thence back to the paper, and from there into the eyes, is made available for vision.

The seats in this room were changed permitting the students to face the west. The blackboard was placed on the west wall conforming to the normal physiological reflexes in that the higher intensities of light should be

reflected back into the eyes, thus being made available for vision. Results noted: Minor discipline problems materially decreased, and 81% of those students with defective vision showed improvement in letter vision.[1]

"Office experiment has conclusively shown that reading is more comfortable when the light source is directly back and slightly to the left of the reader if the right eye is the dominant eye. Should the left eye be dominant then the light should come from the back and slightly right. In this study 54% were right-eyes. With the distribution so close it would seem impractical to have the general light source other than directly back of the student. Slight body adjustments would be made to suit the eye dominancy."

The second important finding of the investigation was that: A defective fixation ability was a major handicap of 56% in attaining knowledge. There was not a marked relationship between visual acuity and successful school work. Fixation ability is defined as[2] "the ability to smoothly change triangulation from a distant object to a near object and then fix the distant object again with quick, smooth eye movements." It is important, too, to realize that fixation ability is a learned visual skill. None of the kindergarten or first grade possessed a good fixation ability or smooth synchronous movements. Apparently eyes reach their peak of efficiency in the fourth grade or about the age of nine.

The fixation test is made this way: a student is given a pencil to hold upright at his usual reading distance. He is told to look at the pencil's eraser. Then his attention is directed to another fixation point in line with the eraser on the wall across the room. The pupils of his eyes are observed carefully as his attention is directed from the pencil to the far point and back again. If he has good fixation ability both eyes will adjust quickly and smoothly to the near and far fixation points. If, however, any of the following are noted his fixation ability is not good.

1. Eyes move in with jerky motion. They should seem to flow into place and stay there.
2. One or both eyes move in slowly. They should move together and quickly.
3. Eyes move in too far and must abverge to make a fixation.
4. One eye fixes the object but the other eye fixes it intermittently.
5. The eyes have a tendency to lose the fixation point. They should hold it steadily until directed to the other point.

Defective fixation ability greatly affects one's reading ability and is responsible for:

1. Wandering attention. The reader cannot seem to keep his mind on his work.
2. Low comprehension of what has been read. The will is being divided between the making of the fixation and concentrating on what has been read.
3. Head movements. Restricted eye movements cause the head to move as the

---

1. Ibid., pp. 9-10.
2. A Research in the Visual Problems of the Students of the Ord City Schools conducted by George A. Parkins, O.D., and Millard D. Bell, Supt., p. 12.

subject reads a line.[1] "When we stop to consider that in moving the eyes, it is only necessary to move a few grams where a head movement requires muscle strength to move at least several pounds, it is readily seen that the ability to move the eyes freely reduces the general bodily fatigue materially."[2] "Eye movements that are restricted in one direction are a handicap of 18%. Most people will unconsciously select a seat in school, church or theater that favors their eye movements. If they are seated on the opposite side of the room their handicap is increased to 36%."

4. Slow reading rate. The making of many fixations and regressions greatly reduces one's speed of reading.
5. Regressive eye movements. It takes as much time to make a regression as a fixation and for each regression made, another fixation is required.
6. Loss of place in reading or re-reading a line. The problem of losing one's place or difficulty in locating the new line indicates defective fixation ability.
7. Necessity of re-reading. So much of the will is sometimes required to maintain a fixation that too little is left to permit the necessary concentration for clear comprehension.

"The musculature[3] involved in making a fixation is sufficiently strong to perform up to one hundred times the amount of work ever involved in eye movements. That being the case, the question of muscle strength does not enter into the problem. There is a question, however, of muscle control or reciprocal innervation which is an important factor in rapid, smooth eye movements. Muscle contraction, or expansion, resulting in movement occurs only through innervation of the nerve responsible for the control of the particular muscle in question. Reciprocal innervation simply means that the opposing muscles in any movement are so innervated that the expanding muscle lengthens at the same rate of speed as the contracting muscle shortens. Without reciprocal innervation it would be impossible to move any part of the human body, so we find if we can move the eyes at all, there is a certain grade of reciprocal innervation. It may be of such low grade as to produce jerky eye movements, or it may be of such a high order as to produce rapid, smooth eye movements.

"Efficient reading requires the eyes to move rapidly and smoothly so it becomes necessary to establish a high order of reciprocal innervation to the extra-ocular muscles of each eye but we must integrate the reciprocal innervations of the two eyes in such a manner that the result is smooth, rapid, coordinated eye movements. With this accomplished, a high order of integrated reciprocal innervation to the extra-ocular muscles is established."

---

1. American Research Council of Optometry, Bulletin No. 9, January 1938, p. 4.
2. American Research Council of Optometry, Bulletin No. 1, June 1936, p. 3.
3. The Elimination of the Visual Handicaps of Slow Readers, written for the meeting of The American Academy of Optometry, Los Angeles, California, June 1939, p. 7.

A small group was put on a type of visual training planned to enable the subjects to achieve an accurate fixation without either conscious or unconscious willed effort. The improvement in speed could be ascribed to the better eye movements which were established. The improvement in comprehension could have resulted only from the will having been relieved of the necessity of controlling the eyes, enabling it to devote its whole attention to the content of the material read.

By this time the problem of the investigation has narrowed itself down to the visual handicaps of slow readers. Mr. Bell selected a large group of rapid readers and a comparative group of slow readers for further analysis and study. This study brought out clearly that the two groups varied in these two visual skills as follows:

	Efficient Readers	Inefficient Readers
1. Fixation ability	Good	Poor
2. Zone of perception	Broad	Narrow
3. Eye span	Broad	Narrow
4. Time required to complete a fixation.	Short	Long
5. Number of fixations	Few	Many
6. Number of regressions	Few or none	Many
7. Return sweeps	Quick	Comparatively slow
8. Projection sense	Good	Less efficient

"Some persons[1] had broad zones of perception if taken one eye at a time but much narrower if taken binocularly. These were the persons with poor fixation ability. It seemed that they required so much conscious effort to maintain a fixation that they were not able to see as much type clearly binocularly as they were able to see monocularly. Kind and size of type and length of line also affect zone of perception.

"It was also evident that the breadth of the eye span depended upon both fixation ability and zone of perception. The time required to complete a fixation might very well be governed to a certain extent by the difficulty encountered in making a fixation. Since it requires more or less willed effort, conscious or subconscious, to maintain a fixation, there is a division of willed effort, in the assimilation the material seen. If the eye span be broadened, enabling the subject to get a bigger eyeful at each fixation, it naturally follows that fewer fixations will be required to complete a line of reading material."

A type of training was developed to broaden the zone of perception and to establish good fixation ability since all factors that make for efficient readers hinge upon these two visual skills. The instruments used to give this training were the Binocular Synchronizer, the Squint Korrector, the Helmholtz Telestereoscope or a Tele-eye-trainer.

The Squint Korrector is used for giving rotational type of exercise. It is a large disc with colored lines painted on its surface and the fixation target is a four inch circle with a red glass button. The fixation target may

1. Ibid., p. 5.

be moved near the center or near the periphery depending upon the type of stimulation the subject needs. The subject wears prism glasses when having exercise on the Squint Korrector.

With the Squint Korrector the Helmholtz Tele-Stereoscope may be used. The targets in this instrument are reading cards with control marks of one color for the right eye and another color for the left eye. For example, the right eye might be fixing on red markings which require exercise of positive accommodation and the left on blue which exercises negative accommodation. This serves to establish reciprocal innervations to the intra-ocular muscles and at the same time trains the eyes for binocular single vision and fusion. The colors are read aloud by the subject. The flashing of light helps to establish rapid and accurate fixations.

The most efficient type of instrument for giving visual training is the Binocular Synchronizer with its Flasher Stereoscope. Its purpose is to train each eye to function at its best individually and then to do superb teamwork. It consists of two 5-inch rotating discs, one visible to each eye. This is made possible by the arrangement of the mirrors. On the face of each disc are colored lines for stimulating the peripheral areas of vision. Each disc holds a fixation target.

Visual training is begun by seating the subject in a comfortable position at the Binocular Synchronizer and adjusting it so that the targets are seen directly one above the other. In the first period of training, the right eye performs or controls the wider eye movement while the left controls the narrower. The subject is told to watch the point on the fixation target which the trainer knows is visible only by the right eye, for four revolutions and then a point on the target before the left eye for a similar time. The fixation points are alternated for a period of five minutes. During this time the operator has reversed the motor several times so that the eyes have received rotational training both clockwise and counter-clockwise. This creates integrated reciprocal innervations to the extra-ocular muscles for each eye separately. The purpose of this is to stimulate efficient rhythmical eye movements in all directions. In addition, because the non-fixing eye is all this time travelling in a circle around the other, it has received stimulation to the peripheral areas of vision, thus tending to widen the zone of perception.

In the second stage the left eye controls the wide rotation and the right the narrower so that at the end of the two first stages of the training period both eyes have received identical exercise. In the third stage the targets are so placed that only one image is seen by the subject. This requires him to fuse the two images. The colored lines on the disc give the peripheral stimulation and tend to widen the zone of perception. In this stage both eyes must function at the same time. Since the two fixation targets are parts of a whole both eyes must function in order to see the whole target.

The Stereoscope Flasher attachment of the Binocular Synchronizer is essentially a Helmholtz-Telestereoscope. It is used to develop quick accurate fixations and to further broaden the zone of perception after a good fixation ability and freedom of eye movements have been established by Binocular Synchronizer.

The Ophthalmograph is a camera for photographing the eye movement while the subject is reading. The Ophthalmograph was used to obtain accurate weekly records of each subject's eye movements in the various experiments. From its records one may know the number of fixations per line; if the subject had any difficulty making those fixations; if he had difficulty maintaining them after they were made; the length of time required to make the fixation and the number of regressions. In short, the photographic record reveals many visual difficulties experienced by the subject in reading.

In Ord in the fall of 1935 fifty-one volunteers from the 7th to the 12th grades inclusive were given visual training. Dr. Worcester, of the Department of Educational Psychology Teachers College at the University of Nebraska, made all the mental and educational tests at the beginning and at the close of the training. The volunteers were given 30 training periods of 45 minutes each. For this training one operator was placed in charge of a Battery of 3 Binocular Synchronizers, another operator in charge of 3 Squint Korrectors and another operator in charge of 3 Helmholtz-Telestereoscope. Each subject received 15 minutes training on each of these three instruments daily. Reading tests of typewritten material, ten words to the line were given weekly. The rate was timed with a stop watch. The initial reading speed of the group ranged from 95 to 485 words per minute with an average of 208 W.P.M. Comprehension was checked by 10 true and false questions on the material read and the average comprehension was 53% of the material read on the initial test. The final results showed an average gain of 122 words per minute with an improvement in comprehension of 36%. 20% had gained over 200 W.P.M. 50% had gained 100-190 W.P.M. 30% had gained 25-90 W.P.M. Checks on reading abilities of the students still in school one, two, and three years later showed that they maintained their gains on the average although there were minor fluctuations for individuals.

The Experiment at the Teachers College of the University of Nebraska in 1937-38 was conducted by Miss Sarah Apperson to comply with requirements for her Doctorate. It was under the direct supervision of Dr. Worcester. For section A of the experiment 66 of the 373 freshmen registered in the Teachers College whose test scores indicated them to be most in need of remedial reading, were selected. One group of 33 was given 3 training periods of 45 minutes weekly for six weeks on the Binocular Synchronizer, Squint Korrector and Helmholtz Telestereoscope. Another group of 33 was given pedagogical reading training during the six weeks. Those given visual training made approximately three times the gain of those on pedagogical training. Section B made greater gains than Section A. The group was smaller and had more individual attention; B's score on the Ohio Psychological was 87.6 compared to 62.7 for group A; also B was a group of volunteers.

In 1938-39 the University of Nebraska Experiment was conducted by H. B. Peters, an optometrist who was granted the Research Fellowship by the American Research Council of Optometry to conduct further investigation of Visual Problems in Reading under the direction of Dr. D. A. Worcester, of the Educational Psychology department. The subjects were drawn from 273 students enrolled in Edu. 30. The 99 whose scores were lowest on the Chapman Cook Speed of Reading Test, the Ohio Psychological, Pressey's Reading Tests, and the Ophthalmograph Records were selected. These 99 were divided into 3 groups. Group A and Group B were given 30 minute visual training periods of different

types. C, the Control group, received pedagogical training. Groups A and B gained 170 and 172 W.P.M. respectively while C gained 123. These differences are statistically significant. In the second semester's work, the subjects were selected at random and placed in three groups of eight each to check the efficiency of the different instrumentation for visual training. The Visually trained Group E gained 204 W.P.M. and F gained 171, G 224, compared to the control group J's gain of 13 W.P.M. Group J had pursued the usual course of study. The variation in gains was due to the different types of visual training given and in part to a difference in motivation.

"The Binocular Synchronizer[1] ranked first in improvement of fixation ability showing more than twice the improvement resulting from the use of the Squint Korrector and three times the improvement resulting from the use of the Helmholtz Tele-stereoscope. The Binocular Synchronizer showed a 10% greater improvement in zone of perception than the Squint Korrector and six times greater than the Helmholtz Tele-stereoscope. Subjects trained on the Binocular Synchronizer made 20% greater gains in the reduction of the number of fixations per line than those trained on the Squint Korrector. Those trained on the Binocular Synchronizer gained 25% more in reading speed than those trained on the Squint-Korrector and 35% more than those trained on the Helmholtz Tele-stereoscope.

"The results of the three methods of training in the number of regressions per hundred words was not significant."

Experiments at Claremont were conducted in 1940-41 by Dr. A. Burton Clark under the supervision of Dr. Peter L. Spencer of Claremont Colleges. The problem was to measure fixation ability, ability to maintain a fixation, the zone of perception, visual acuity and suppressions. Sixty-two ninth-grade students from the Emerson Junior High School in Pomona were given the Revised Edition of the Iowa Silent Reading Test, Form A, by their classroom teachers. Dr. Clark made the optometric tests. One group was trained on Helmholtz-Telesteroscope; the other on the Squint Korrector. Thirty training periods of 15 minutes each were given. The results showed a Fixation Disparity improvement of 1.4 Prism Diopters; no change in reading speed and only 7% improvements in comprehension. There was no improvement in the subjects' ability to maintain a fixation but there was a full year's gain on the Iowa Silent Reading Test. The outstanding finding of the Claremont Experiment No. I was the unusual visual problem of a high percentage of students having extreme difficulty in maintaining a fixation after that fixation was made. This peculiar difficulty had not been encountered in the experiments in the Middle-west.

Claremont Experiment No. 2: Students from the fifth and sixth grades at Lincoln School, Pomona, were selected and given fifteen minute training periods daily on the Squint Korrector and Binocular Synchronizer alternately except on alternate Wednesdays when the Council's reading test and the Ophthalmograph records were made. The First Control Group attended school as usual but had the same tests as the Experimental Group. The Second Control Group had only the initial and final battery of tests. The group given visual training made a gain of 76 W.P.M. There was no significant change in either of

1. American Research Council of Optometry, Bulletin No. 21, pp. 1 and 2.

of the control groups. Visual training eliminated the difficulty in maintaining a fixation in 14 out of 24 and materially lessened it in all but one of the subjects trained. There was a midyear loss in rate of reading which was greater for the control groups than for the Experimental Group.

The Boulder Experiment was under the supervision of Dr. Dorothy Van Alystine, School psychologist and Assistant Professor of Education of University of Colorado at Boulder. Seventh and eighth grade students were given the California Test of Mental Maturity and the Gates Silent Reading Test. The 99 whose reading ages were lowest in comparison with their mental ages were selected and divided into three groups. The personnel in charge of the training periods and the Ophthalmograph records was selected from W. P. A. and trained to do this work. Twenty-four out of sixty of the students on training were reported by Dr. Van Alystine as uncooperative -- indicating the need for the trainer to be able to inspire and motivate those being trained if successful results can be expected. The training began October 2 and lasted through January. Group A was given training on the Squint Korrector; Group B used the Binocular Synchronizer. C was the control group. At the end of the time, those trained had broader zones of perception, corrected eye movements. There was an increase of 64-67 W.P.M. in reading rate with an improvement in comprehension of 7 and 11%. The control group showed no change in visual functioning, a loss of 15 W.P.M. but a 9% gain in comprehension. The three groups showed mid-semester losses similar to those at Claremont.

Some general conclusions resulting from the various experiments are: The training given by Dr. Peters in the II Experiment at University of Nebraska which was 15 sessions of training on the Binocular Synchronizer followed by 15 sessions of training on the Helmholtz-Telestereoscope is the most productive of good result. The personality of the trainer in charge and his ability to give his subjects an appreciation of the benefits to be derived from visual training is important. It accounted for one group in the Ord experiment making 40% gain in reading speed as compared to a 20% gain for another group. The individuals with the higher intelligence showed the greater gains in reading speed from visual training. Several attained and have maintained a reading rate of over 1000 W.P.M. When visual efficiency was increased there was a like increase in intelligence quotient.

The foregoing indicates the effect of visual training given to groups of students. Those optometrists who have contributed to and made this research possible could present many interesting studies of individual cases whose benefit from visual training far exceeds the average of those trained in groups. However, individuals who are so uncomfortable that they seek aid are so motivated by their personal problem that their interest stimulates them to get the maximum of benefit from the visual training and the results are outstanding.

The following are problem students of a tutor who used the Binocular Synchronizer in addition to pedagogical training:

Problem D. D is a boy sixteen years old and in the tenth grade. He is the third child in a family of four children. Two older children did above average work in school. D has a pleasant personality and is well adjusted at home and with persons his own age. He is ambitious; always has a job. He

likes work better than school. "I can do good work for my boss but not for my teachers" is the way he summed up his problem. He had never done well in school and was failing in two subjects when he sought the tutor. The family optometrist had found nothing wrong with his vision when he was in elementary school, but he had always had trouble making his grades. He didn't go to movies because they made his head ache. He was very restless. The tutor found his eye movements restricted and his fixation ability very poor. His zone of perception was narrow but the same for each eye individually as binocularly. On the Reading test cards of the American Research Council of Optometry his reading rate was 170 W.P.M. with a comprehension of 60% of the material read. He made many fixations and regressions. He could exert enough willed control to read short paragraphs but he seemed exhausted afterwards. After 30 training periods he could read for hours. He lost his characteristic restlessness; he could attend movies in comfort. However, during the school year he had repeated attacks of appendicitis. The appendix was removed, then came tonsilitis and the tonsils had to be removed. The following year his school work again slumped and the old headaches were back. He was given 3 training periods a day for four week-ends and again he was comfortable. His mother reported that he made all his credits for the first time in high school. He has a job, too, two hours after school and all day Saturday.

Problem J. J. is a boy ten years old who had just completed the fourth grade. He has one older brother who, in spite of repeated illnesses has always been a good student. J. however was never ill and never did well in school. The school had sent notices that J's eyes needed attention but there were already many doctor bills and nothing was done about J. On the Tiegs-Clark Progressive Reading Test his grade placement was 3-1 when it should have been 4-9. His oral vocabulary was poor; he had a limited reading vocabulary, no ability with phonics and in addition had all the symptoms of a defective fixation ability. He spent two one-hour periods a day with the tutor. Approximately 1/3 of the time was spent on visual training with the Binocular Synchronizer, the rest on vocabulary development and spelling. He had in all thirty training periods. At the end of that time his grade placement on Form B was 5-2 or two months advanced from his need for the opening of the new school year. His fixations were reduced to 7 or 8 per line with only occasional regressions. When school opened for the next term the school nurse phoned his mother to find out what had been done for J's eyes since his visual acuity was 2-/20 now and he wasn't wearing glasses! Notices of inattention and poor work no longer came home from school to J's parents.

Problem P. P was a girl in 6A who faced remaining there unless something were done about her reading disability. She was the second in a family of three children. The older had made superior achievement all through school; the youngest was not yet in school. It had become evident that she was not learning to read normally in the second grade. During the next four years several things were done in an attempt to solve her problem. There were changes of school and teachers in hopes that a new environment and another teacher's personality would effect improvement in her ability to read. She had the help of a tutor using the Fernald technique. She attended summer school. Her eyes were examined by an optometrist who found no visual deficiency. An oculist gave her glasses for the psychological effect. Her grade placement in a reading on a series of educational tests indicated about 4-1. On the Council's Test her rate was 84 W.P.M. with 60% comprehension. She had

a narrow zone of perception and it was narrower taken binocularly than with the eyes individually. Her fixation ability was so very poor that it was impossible to count the number of fixations and regressions. She was given visual training on the Binocular Synchronizer for 15 minutes and oral work in phonics either before or after her regular school day. After three weeks her eye movements had improved to the extent that she was ready for stereoscopic training on the Flasher. Then her training was 15 minutes of rotational training and 10 of Flasher with 25 minutes of pedagogical help in reading. When the Modern School Achievement test was given in the school 2½ months later her reading rate was above 10th grade; her comprehension 8.7 with 100% accuracy or a gain of 4½ years educationally. On the Council's Test she had made a gain of 108% in rate with 66 2/3% in comprehension. In all she had 60 periods of visual training. Her whole personality changed. She became happy and confident and is now vice president of the student body of her high school.

Teachers should be aware of symptoms of visual disturbances and how they manifest themselves. The following symptoms are relatively easily detected in the classroom.

Frowns: Frowns are probably caused by a spill-over of the excessive amount of neural energy that must be exerted for the visual act. This spill-over irritates the nerves of the face causing the appearance commonly known as frowns. Frowns when looking at the blackboard or when the student was reading or doing other close work indicated lack of good fixation ability in 86% of the students reported in the Ord Experiment.

Afternoon headaches: If the student has persistent afternoon headaches -- seems visibly uncomfortable, it is possible that his trouble is of ocular origin.

Restlessness: A subject with either average or above average mental ability who habitually takes a long time to settle down to work or who can't stick to his work, particularly in the afternoon, is a victim of eyestrain. Ninety-eight per cent of those students with "nerves" had visual disturbances.

Head Positions: The person whose head is tilted to one side or forward or backward shows lack of muscular balance in his visual functionings. This may be noted when he is doing close work or using his vision for distance. Unusual head positions indicate restricted eye movements.

Comparative Size of Eyes: Sometimes one eye appears smaller than the other. This is caused by more neural energy being required for one eye to complete the visual act than for the other. This energy irritates the nerves controlling the eye-lids which narrows the palpebral fissure and makes the eye look smaller than its mate.

Distance of Book from Eyes: The distance the student holds his book from his eyes must be considered in terms of his age group. With certain defects of the visual apparatus, the object of regard must be held at unusual distances in order to obtain clear vision. 83% reading at unusual distances had visual difficulties in the Ord Experiment.

Dominance of Hand and Eye: A knowledge of the eyedness and the handedness of unsuccessful students is important in that a changed handedness sometimes is responsible for both speech and reading disabilities. Usually if the right hand is dominant, the right eye is dominant also, but this is not always true. It appears that dominance of hand and eye, either agreeing or opposite, is an inherited pattern. A few persons are ambi-eyed. Defective vision in the dominant eye is more serious than in the non-dominant eye. Sighting a point on a distant wall over the index finger of the outstretched hand with both eyes open and closing first the right and then the left eye is a simple means of checking eye dominance for distance. The eye which holds the finger on the point when the other eye is closed is the dominant eye. However, no simple procedure has been discovered for detecting the dominant eye for near vision.

Freedom of Eye Movement: If the subject has the ability to look directly at an object either to the left or the right of center without at the same time moving his head, he is said to have unrestricted eye movements. If, however, his head moves and then his eyes fix on the object, his eye movements are said to be restricted. This test is easily made by having the subject keep looking at a pencil eraser as the person in charge moves it to the right and to the left at the subject's normal reading distance. If the subject knows the purpose of this test it is useless because willed control enters and the subject will force his eyes to look without moving his head.

The observational method of counting the subject's eye movements in reading is fairly satisfactory if the observer has keen vision. This can be accomplished by direct observation of another's eyes when reading or by the use of a mirror placed on the page adjacent to the one which the subject is reading. By watching the corneal reflections, an approximation of the eye movements can be acquired. The eyes of a good reader will make probably three to six fixations per line, and the long backward sweep to the new line will be quickly and accurately made with no random or regressive movements. It is difficult and even impossible to count the eye movements of a reader with a serious fixation difficulty. The Ophthalmograph, however, does record these visual anomolies.

In summary: Those dealing with the education of children should bear in mind that poor lighting of classroom ranks with childhood diseases in causing the continuous break-down of those visual skills which have reached their peak of efficiency when the child is about nine years old. Arranging desks so that the windows are behind the student does much to correct poor lighting.

Educators should also realize that while vision itself is undoubtedly native, fine discrimination must be acquired. Those individuals who have not developed the essential visual skills in the normal course of learning to read can acquire or improve those skills through visual training.

Bibliography:

American Research Council of Optometry. Bulletins.
Apperson, Sarah V. The Effectiveness of Orthoptic Training as a Means of Remedial Instruction in Reading. J. of Exper. Educ., Dec. 1940.

Parkins, George O. and Bell, Millard D. The Effective Use of the Available Supply of Natural Light Studied in a Research in the Visual Problems of the Students in the Ord City Schools.

Parkins, George A. The Elimination of the Visual Handicap of Slow Readers.

Parkins, George A. Handicaps in Reading. Rutland, Vt., Tuttle Pub. Co.

Parkins, George A. and Bell, Millard D. A Research in the Visual Problems of the Students of the Ord City Schools.

Reed, Homer B. The Psychology of Elementary School Subjects. Boston, Ginn, 1927.

Worcester, D. A. The Influence of Orthoptic Training on the Reading Ability of College Freshmen. J. of Exper. Educ., Dec. 1940.

GROUP HARMONY

Mrs. Elta S. Pfister, Director of Individual Guidance, Burbank City Schools

Group harmony might be applied in a number of ways to the subject of children with problems. Educators are careful to use the term "children with problems" rather than "problem children," with the idea in mind, perhaps, that we had the child first and the problems came from the later association with individuals and groups.

The term juvenile delinquent, too, is somewhat misleading because we are not sure whether the juvenile has been delinquent or the adults responsible for his training have been delinquent. Delinquency may mean misbehavior to some adults, or it may mean such a serious offense as grand theft, or even murder.

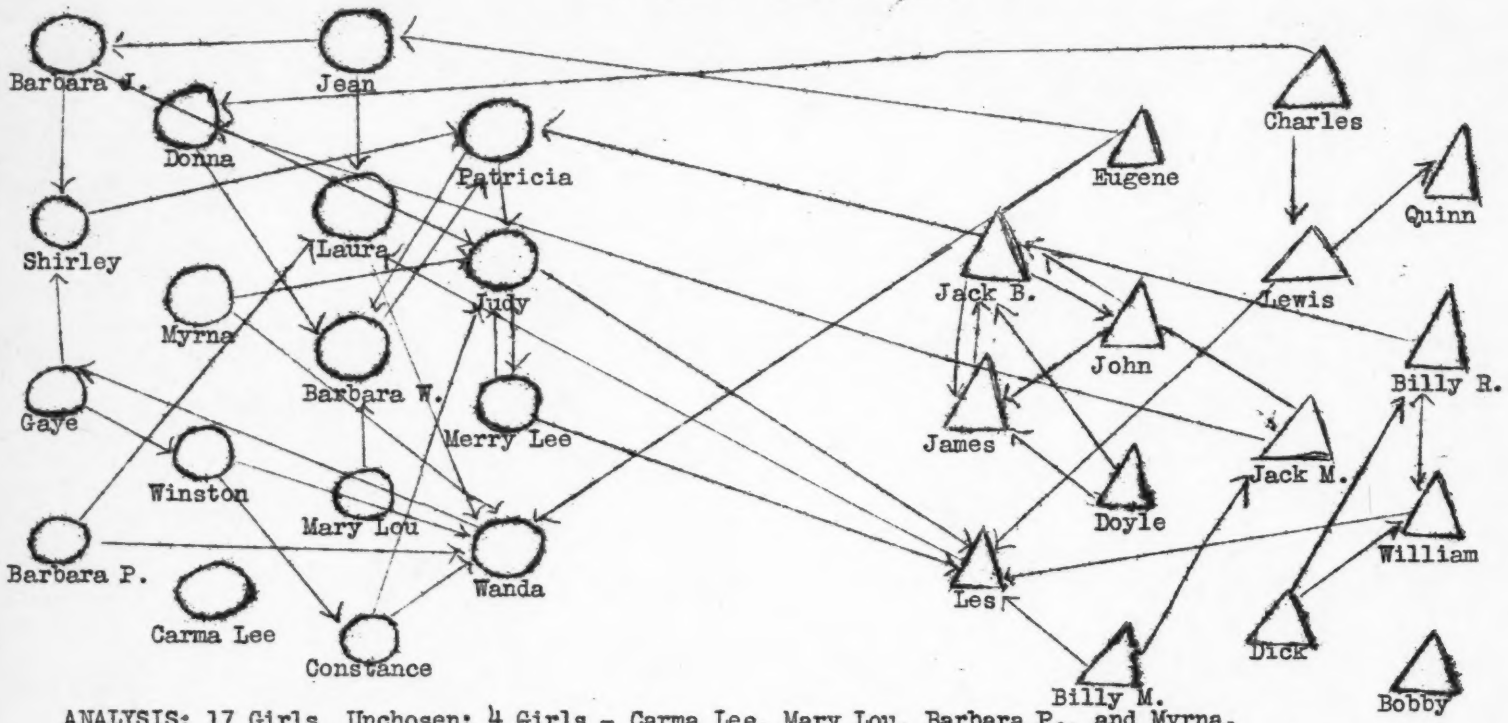
We will all agree that children are not born equal. They have certain mental and physical abilities with which they were born which makes everyone different from the other. However, influences are early at work to alter, impress, and form the character and personality of children. Perhaps there are three types of discipline which help form the character of this living organism. The first definitely is the discipline of the parent; the second, group discipline, and last, self discipline, which is, no doubt, the highest order of control and certainly basic to our democratic way of life.

Early in the life of the baby the mother disciplines him by placing him on a feeding schedule and sometimes training him to sleep, eat, and void at certain times of the day at certain places and in a certain manner. She continues to train the child from infancy through early childhood.

Second, the very young child may enter a nursery school, or he may start kindergarten at five years, and there is a definite program of control and discipline at work. Drop in any kindergarten and you may overhear a child say, "I don't want to play with Johnny because he doesn't play nice," or "We don't want Johnny over here with us." The teachers may say, "We do things this way at kindergarten;" "We don't like little children who don't play nice"; or "The other children won't like you." In order to determine the group standing of any child in the classroom or to get a description of the class as a whole, sociometric techniques are most helpful. The teacher can guide the development of backward, maladjusted, or officious children much more intelligently, if she knows where a child stands in the estimation of his peers. Moreno describes this technique in his book, Who Shall Survive. The California Study of Adolescence, with Jean McFarlane, Dr. Herbert Stolz, and others, has used the sociometric approach to obtain data relative to group harmony. You may have used this "Guess Who" technique. It provides a comparatively simple method of analysis of a class situation. Each student is asked to write on a slip of paper the person with whom he would like to work, if he had the opportunity, or with whom he would like to play. He is asked to put down a second choice and sometimes a third choice. A sampling in an ordinary school district provides a picture something like this: See Diagrams I, II and III.

Each child in a second grade group was asked with whom he would like best to work, on a committee, to build a harbor unit. Each named two people. A diagram was drawn up on an ordinary sheet of paper $8\frac{1}{2}$ x 11, with circles on

CLASS STRUCTURE
2B Grade - Emerson School



ANALYSIS: 17 Girls
15 Boys

Unchosen: 4 Girls - Carma Lee, Mary Lou, Barbara P., and Myrna.
6 Boys - Eugene, Charles, Bobby, Doyle, Billy M., and Dick.

Pairs: Merry Lee and Judy, William and Billy R. (1st choice), Lewis and Lee, James and Jack B., Patricia and Barbara W., Barbara W. and Wanda

Chains:

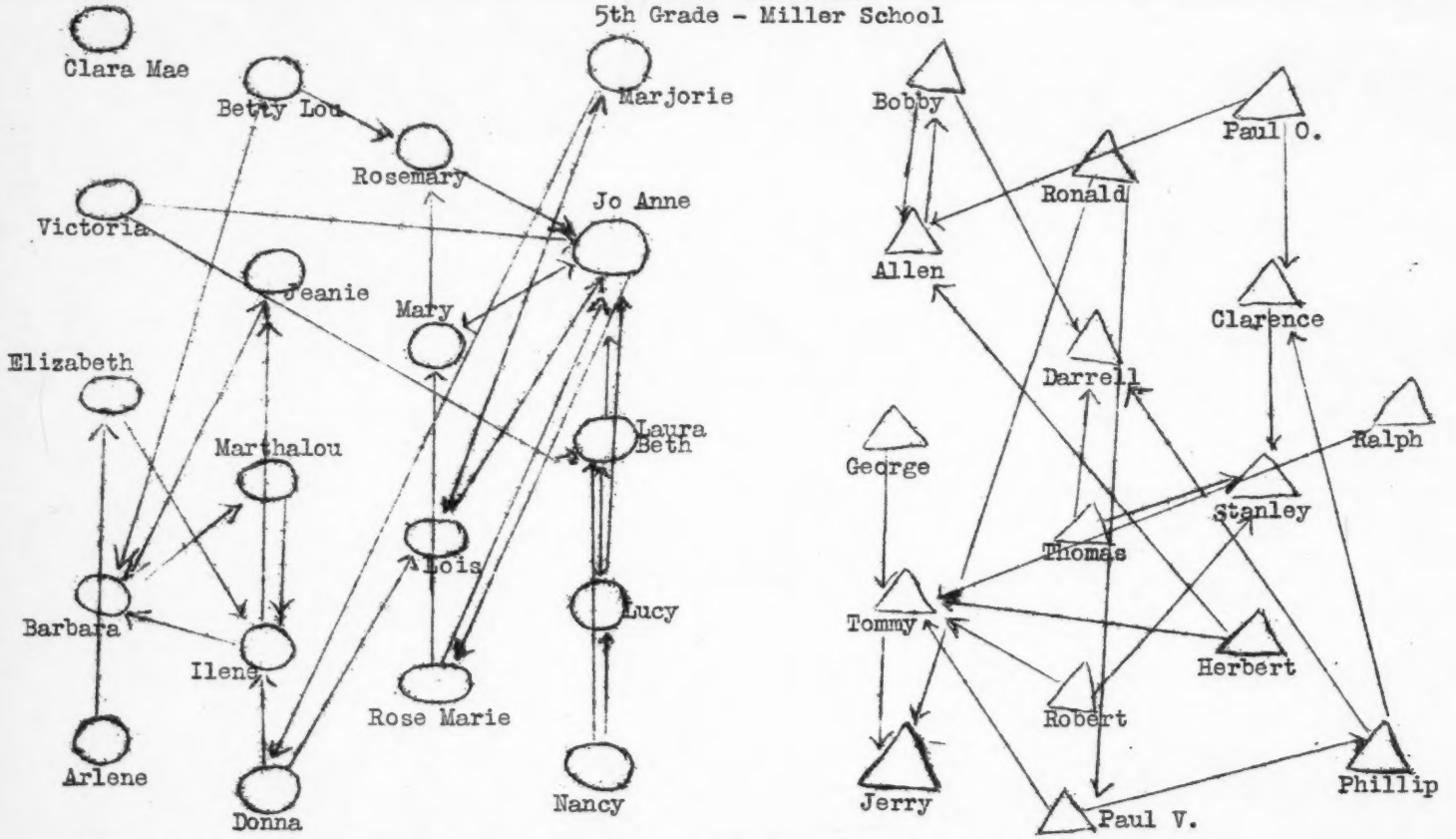
Triangles: Wanda to Gaye to Winston.

Stars: Judy, Wanda, and Lee

Intersexual: Eugene chose girls and was not chosen by boys; two boys (Charles & Jack M.) chose Donna but only one girl chose Donna; Donna chose girls, Judy and Merry Lee chose Lee; Lee chose Laura.

CLASS STRUCTURE

5th Grade - Miller School



ANALYSIS: 19 Girls: Unchosen: 5 Girls - Victoria, Arlene, Clara Mae, Betty Lou, Nancy.
16 Boys: 5 Boys - Herbert, Paul O., Ronald, Thomas, Robert.

Pairs: Marthalou and Elizabeth, Rosemary and Mary, Lucy and Laura Beth (1st choice), Marjorie and Lois (1st choice), Jo Anne to Mary (1st choice) Jo Anne and Rose Marie, Barbara and Jeanie (1st choice), Allen and Darrell (1st choice), Allen and Bobby, Jerry and Ralph, Tommy and Clarence.

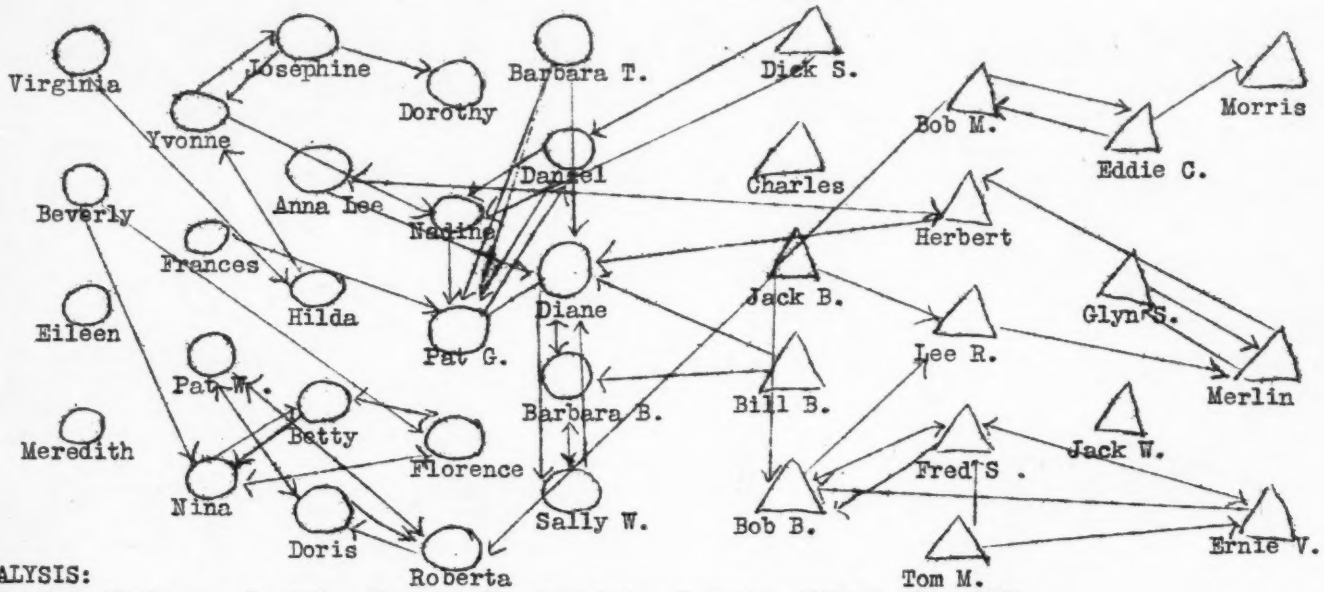
Chains: 0

Triangles: Marthalou to Ileene to Barbara, Lois to Marjorie to Donna, Rose Marie to Mary to JoAnne, Rosemary to JoAnne to Mary, Bobby to Darrell to Allen, Tommy to Jerry to Ralph. Stars: JoAnne, Tommy, LauraBeth, Allen

Intersexual: George chose Laura Beth (1st choice).

Class Structure

9th Grade - John Muir Junior High School



ANALYSIS:

23 girls Unchosen: 5 girls: Barbara T., Virginia, Beverly, Eileen, Meredith.

16 boys 6 boys: Bill B., Charles, Jack B., Dick S., Tom M., Jack W .

Pairs: Pat W. to Doris (1st), Nina to Florence (1st), Hilda to Frances (1st), Barbara B. to Sally W.(1st), Fred to Ernie (1st), Betty to Florence, Pat W. to Roberta, Diane to Barbara B., Josephine to Yvonne, Doris to Roberta, Sally W. to Diane, Pat G. to Denzel, Betty to Nina, Bob M. to Eddie C., Merline to Glyn S.

Chains:

Triangles: Roberta to Doris to Pat W ., Betty to Florence to Nina, Barbara B. to SallyW . to Diane, Nadine to Pat G. to Denzel, Bob B. to Fred to Ernie, Merlin to Glyn S. to Lee R.

Stars: Diane, Pat G.

Intersexual: Bob M. to Roberta, Bill B. chose both girls (Barbara B. & Diane), Dick S. chose both girls (Denzel & Nadine), Herbert chose both girls (Anna Lee & Diane) and was chosen as first choice by Anna Lee. Nadine chose Glyn S.

the lefthand side labeled with the name of the girls. Triangles were drawn on the righthand side with the names of the boys. A red line was drawn from each pupil to his first choice; a blue line was drawn from each pupil to his second choice. Results of many diagrams show there are certain characteristics of primary grade structures. One is that boys often choose little girls and little girls often choose little boys. Note the accompanying diagram. Primary age children are very honest in likes and dislikes, and frequently tell you there is one certain boy or girl that no one likes. There are few children of that age with a social consciousness making them loath to hurt another's feelings. There are relatively few triangles, cliques, or chains at this age. There are definite stars of attraction, however, and definite rejections. There are often twosomes which can usually be traced to proximity of their homes, relationship, or friendship of the parents. A peculiarity noted was that stars of attraction were not always the most brilliant children in the room, but usually were average children who were quiet and unobtrusive. Diagram Number I pictures the selections of normal second grade children.

A class structure diagram of a fifth grade, or upper elementary group, presents quite a different picture. You will note by studying Diagram Number II that girls very seldom choose little boys, and vice versa, at this age. The average person considers adolescence to be a period covered by junior high school years. You need only to glance at Diagram II to convince yourself that adolescence is well started in the upper elementary grades. While observing the class, it was noted that there was much "puching" of the girls, much "pencil grabbint," and " ccidental stumbling" against the opposite sex; yet the selections of pleasurable companions did not include the opposite sex. It was comparatively easy to get this Diagram II for you, because the pupils use tables which seat four, in place of desks, and each pupil was asked to name three others with whom he would like to be seated for the coming year. It is not uncommon in that classroom to have boys and girls at the same table because of the difference in height of the furniture. Another adolescent trait, which you will see, is the nuclei of gangs and groups. By observation it was easy to picture a cross section of our adult society. Little embryo political groups were forming and one little group of girls were evidently forming what might some day be a women's club or organization. There were dreamers in the group, industrious plodders, play boys, and officious young ladies. The pupils who were rejected were differemt in appearance usually. Their clothing was ill kept and their general appearance shoddy. Their facial expressions were somewhat dull and unhappy. Teachers of these classes are greatly surprised to have the structure show up pupils' standing among other pupils. Occasionally these teachers found that unconsciously they had been favoring, or at least had very high estimations, of a certai little boy or girl, whom outwardly the other pupils accepted, but when asked to make choices, rejected. Often times these are the "goody-goody" children of a class, and quick to do the teacher's bidding. Again, the stars of attraction were not the brilliant children, but rather the high average, unobtrusive. The class cut-up is seldom the star of attraction.

A ninth grade class is Diagram Number III. It is now entirely acceptable to have a boy or girl friend and so indicate. The crossing of lines between sexes, however, is not as yet as free as we observed with a primary

group. There is a greater indication at this age, of groups which might be called gangs. On the early adolescent level, or fifth grade, there continued to be smaller cliques and groups based somewhat upon the geographical proximity of their homes, and the closeness of seating arrangements. The older group definitely made their seating arrangements and were grouped more nearly on a social level. The more sophisticated were together, the immature in a group, and the dull normal grouped themselves. There seems to be more sharply cut lines between the immature and the physically well developed children of this age. The small immature boy or girl in these upper grades often presents quite a problem and, if grouped together with others more developed, is likely to have an unsocial attitude. This evidentally is an expression of the desire to exert themselves as men and as women in spite of the fact that their bodies are not quite ready. More than at any other age represented in the twelve years of school, it was found that the range could extend from definite juvenile behavior to adult action.

This next heading and third point is self-discipline, which I have stated is the highest order of control and basic to our democratic way of life. As we progress through the grades and on up to the 18-year-old boy and girl, we find a degree of self-control, which has obviously been accumulated from the first motherly direction given in babyhood, plus guidance by the teacher at school and control by the social group of peers, to independent action of a superior type. Self-control cannot be overemphasized in the training of all children. The lack of it is evident in the case histories of children who have been in conflict with the law. Another fundamental fact is that training for self-control must begin early. Proponents of Childhood Education, who encourage self expression to a degree beyond the point of social approval, are not helping that child. From ages sixteen to eighteen, and with exceptions of course, boys and girls will do things to "see if they can do them." They have a tendency to over-exert in sports and to force themselves as students, or in any other way they are directed. You may have heard a boy or girl saying that he has always feared the dark and has forced himself to walk slowly in the dark from room to room of a house, when no one is at home, or do other similar feats which are not important in themselves, but which point toward an achievement of self-control.

Religion and spiritual values are basic to any degree of development of self-control. Children at this age often have very well confirmed, and often stubborn, ideas in regard to right and wrong. They will gang together to defend an "abused" comrade, or as a mob, carry the football hero from the field on their shoulders. The zoot-suit gang wave, which has spread over the United States, and the youth movements of any of the nations of the world are evidence of enthusiastic fervor of youth. The zoot-suit is merely the present "badge of boldness." A "cause" is a potent factor in directing a youth toward action. We cannot help but realize that the head-strong, idealistic, religiously honor-bound youngsters of Japan and Germany cast caution to the wind and plunge headlong into mortal conflict, without thought of caution or self preservation. We realize, I am sure, that this is indeed a factor in so-called bravery and courage, which a war-time world idolizes. Enlistment in the armed forces of the United States has been opened to the youth of seventeen, with full knowledge that such youth are daring and the thrill of danger is pleasant to them. A wise nation, in peace time, will spend as much money and time in directing daring youth with their zealotic fervor

toward wholesome and helpful contributions for the betterment of the people of the world.

If the ground of discipline and control has been well laid in early childhood, and examples of living well demonstrated, no parents or teachers need fear as to the way a child will walk as he grows into manhood or womanhood. It is not only logical but inevitable that the human being progresses from loving personal discipline through group control to the highest form of direction, which is self-control.

We have a tendency to spend much time and thought on molding, shaping, and directing youth, but group harmony among adults will set the pattern for youth. If adults are themselves delinquent, it is not unlikely that a child in that family would lack in self-control, or at least break social bounds at sometime during his life. It is believable that corruption in politics, injustice in our law enforcement, and hypocrisy in faith will lead to a degenerate civilization.

Rather than to close with such a thought, we can look, if we will, to a post-war world where sincere educators and religious leaders will make themselves felt in government and human relations without fear or hesitancy, to the extent that a generation of boys and girls shall grow into men and women who, with self-control, will create a finer world-order based upon Group Harmony.

IS HEARING CONSERVATION THE EDUCATOR'S RESPONSIBILITY?

Catherine A. Phelan, Speech Reading Teacher, Whittier Public Schools

The word "conservation" is full of meaning. It implies protection, supervision, and preservation. Conservation, in wartimes, is much more meaningful. War always brings us to the realization of our shortcomings, especially where human resources are concerned.

Hearing is a priceless gift. It has everything to do with understanding language. Without language we are indeed isolated.

Hearing conservation, then, means the protection, supervision, and preservation of a priceless social gift, and is therefore a social concern. But whose immediate concern? It is my conviction that the educator can no longer assume the ostrichlike attitude of failing to see the problem as his concern. Hearing conservation is his responsibility and it is his professional duty to do something about it.

Any educational official who neglects the opportunity to save the hearing of children is guilty of depriving many future adults of their natural heritage and is not in accord with the aims set for the educational profession by the Educational Policies Commission or the platform of the National Education Association.

The Educational Policies Commission, a few years ago, set forth the first concern of education as personal, that is, "Every individual shall live up to the measure of his ability, become a mature healthy person, who shall be able to carry his own social weight and contribute to the common welfare." The second concern also is social, that is, "To enrich the social soil in which the personality grows."

The platform of the National Education Association is, "Every child, regardless of race, belief, economic status, residence or physical handicap, should have the opportunity for fullest development in mental, moral and physical health, and in the attitudes, knowledge, and skills essential for individual happiness and effective citizenship."

Optimum hearing health for every school child, then, must be the concern of every public school official.

Of the many impairments which afflict our school children, few scar the personality with greater unhappiness and cause more real tragedy than hearing impairment. For unless the hearing handicapped child is guided into a pattern of educational and social security, bewilderment, intellectual disillusionment, and emotional frustration will mar his life. The salvaging of the human being should be the cornerstone for any educator's program.

In the classroom, the teacher talks -- lectures -- explains. She takes for granted that the receiving end, the auditory apparatus, is recording the message correctly. She is aware of the power of her speech as a teaching medium. Pedagogues, I believe, will agree that no teaching device can take the place of the physical presence of the teacher. Why? Is it because she is pleasing to look upon? Or is it because of what she does? I think it is

because of what she says. Perhaps of all the tools of her trade, the teacher is least familiar with the organ of hearing and its physical limitations. On the other hand, hearing, or speech reception, should be given primary concern. No musician of note would consider playing on a musical instrument unless its playing condition be satisfactory. No surgeon would consider performing an operation until he knew the condition of his instruments. By the same reasoning, shouldn't a teacher know the condition of that organ which is at the receiving end of her most valuable tool, her spoken voice? How many teachers ever give this matter even a fleeting thought. Yes, hearing is taken for granted, much the same as tasting and smelling, but only those who have lost the sense of hearing can truly appreciate the loss.

Ears are not only the organ of hearing, but they may also be called the organ of speech. For unless speech is first heard, it cannot be repeated. Speech develops from hearing, and repeating what is heard.

A 10% hearing loss will retard the school work of children unless they are exceptionally bright and alert. A hearing loss affects their dispositions, makes them listless, cranky, sensitive, seclusive, and unhappy.

As teachers, we must not fail to realize the importance of hearing. Those who are both deaf and blind say that their deafness is much the worse of the two afflictions. The handicap of deafness is so little understood by educators in general that it may be said not to be understood at all. In this respect deafness is unlike blindness, which makes an instant appeal.

In 1926, two eminent men, one in the field of otology and the other a foremost modern expert on sound, startled the medical profession and the public in general with an article entitled, "Three Million Deafened Children." This figure is approximate. There are perhaps many more. Figures released by Dr. Warren H. Gardner, a nationally known Consultant in Vision and Hearing, at the American School Health Association Conference, last October, showed that national figures consistently show that approximately 5% of the school population has hearing deficiencies.

The hard-of-hearing child even more than the normally hearing child needs not only vocational counselling but advice in regard to his family relationships, his contacts with his fellows and society at large. Hard-of-hearing children properly prepared for life can be in their remarkable way just as happy as persons who hear normally; in fact, they are sometimes happier. It is no favor to these children for the teachers to let them slide through school simply because school authorities do not want to hurt anyone's feelings. Children will not outgrow a hearing loss unless the cause is removed.

Upon the discovery of a hearing deficiency, it is found over and over again that our real difficulty comes in bringing the parents to accept the facts. Often offended when informed that their child has a hearing loss, they too frequently refuse to overcome false family pride, which simply will not let them believe that this could happen to their child. As a result stubbornness comes to play a great part and many years are wasted during which the situation might have been brought under control. Then, when it is too late, they awaken to a realization of the error.

The most important single cause of acquired hearing impairment is meningitis. Other infectious causes are scarlet fever, measles, diptheria, and mumps. The outlook for the restoration of normal hearing in both the congenital and acquired forms is practically hopeless; the problem of treatment resolves itself into one of education.

There is no phase of the health program in which it is more important to deal with the whole child than in work with children acoustically handicapped.

The goal of the educator is not necessarily to help the student forget his defect, which might merely mean the suppression of his unhappiness about it, but to help him recognize his handicap and find a place in life which will give him as many satisfactions as possible.

Child guidance and research counsellors regard hearing tests as important as achievement and intelligence tests in diagnosing the difficulties of exceptional children. Early discovery of indications pointing to a progressive loss permit educators to guide children away from difficult school and social situations and prepare them adequately for successful living. It is better for the nation to spend more on the education of children who deviate from the norm now than to have to support them over a long future period as dependent adults. The handicapped, generally speaking, are utterly dependent upon the social order. They too often are its victims rather than its beneficiaries.

Children with impaired hearing are no different from others except in the loss of normal hearing. They want to live. They want to be wanted. They, will all the other millions, want to be useful. No physical handicap should be a bar to close the door of opportunity to anyone.

There is a general accord among otologists that the majority of cases of ear trouble among children which is regarded as the great cause of hearing impairment, is due to neglect, not only of ear trouble in its incipiency, but of the conditions that lead to it. Repeated colds in childhood, earaches and running ears, as well as measles and scarlet fever are regarded far too lightly in respect to their effect on hearing. Back of the repeated cold, we are apt to find malnutrition, even in the midst of plenty; for nutrition depends not so much upon quantity as upon the composition of the food eaten, upon sleep and rest and other important factors that keep young bodies strong and healthy. Health preparedness for the prevention of hearing inacuity would seem to lie in impressing parents and the elementary teachers in particular early and often with the importance of what may seem to them very unimportant things. It should be impressed upon them that malnutrition and bad health habits lower the resistance to colds and contagious diseases and that they can be overcome. It should be impressed upon them that running ears, repeated colds, diseased tonsils and adenoids are the forerunners of ear trouble and must have medical attention. Proper food, fresh air, sleep, and rest will build bodies that can better resist the causes of hearing impairment.

The efficacy of any conservation of hearing program is contingent upon the cooperation of the entire school system and all agencies working with the child. The school system locates him through the testing program. Health follow-up services direct him to the otologist's care. Then the grade

teacher's cooperation becomes indispensable. To her the handicapped child can be a definite challenge. She must develop desirable attitudes. She must understand the important relationship between hearing loss and distance. She must understand that mere repetition does not make speech more readable from the lips. She must begin to crush any manifestations towards loss of self respect, a sense of uselessness, or tendencies toward social maladjustment. The primary teachers can do much to forge the hearing link in the chain of health.

To the individual who is acoustically handicapped, life can be a tragedy. Deafness, itself, is not the condition which is to be most dreaded. It is the effect of isolation on the personality that is the damaging factor.

In speaking of the world, or people in general, Walter Lippman says, "As we keep men and women from despair, from the hideous boredom of having nothing to do, from the crushing sense of not being wanted, of having no place in society and no work to do, of being a problem and not a human being, we are accomplishing our real task. We must provide work, entertainment, interests, sociability and advice and friendliness and all those imponderable necessities which help to make men self-respecting and confident." If it takes all of this to mold and build the average person, who has the use of all of his faculties, how much more then is it needed for the handicapped, who by reason of the handicap already has his emotional start in life.

In his book, On Being a Real Person, Harry Emerson Fosdick says, "Without exaggeration, it can be said that frustrated, unhappy people, who cannot match themselves with life, constitute the greatest single tragedy in the world....Three elements enter into the building of personality; heredity, environment and personal response....No well-integrated life is possible without an initial act of self acceptance....When self-acceptance is not achieved and the strain between the actual and the dreamed of self becomes tense, the result is an unhappy and sometimes crushing sense of inferiority. Among the constructive elements that make self-acceptance basic is the principle of compensation. Deficiency can be a positive stimulus....Some form of compensation is almost always possible....Involved in such successful handling of recognized inferiority is the ability to pass from the defensive to the offensive attitude toward our limitations. One of the most durable satisfactions in life is to lose oneself in one's work. This is why more people become neurotic from aimless leisure than from overwork, and why unemployment is one of the worst of tragedies." According to Mr. Fosdick, one of the commonest causes of personal disorganization is despondency.

Despondency, unemployment, unwillingness to accept the handicap, frustration, not being wanted, and unhappiness are the effects of deafness. All of these damaging personal psychological factors of which Mr. Fosdick and Mr. Lippman refer, strike with merciless fury the personality of the victim of a faulty auditory mechanism. It has been shown scientifically that sound not only informs the intellect as sight does, but that it excites feelings far more than sight; its primary effect is the creation of moods and emotions. Human conduct is based more on emotion than on reason. Approaching deafness, then, is not only a physical and social problem but also a psychological problem.

Any community that does not take advantage of modern hearing conservation methods and educational adjustment is neglecting its duty in promoting

success and happiness for its future citizens.

In summary, it can be said that hearing conservation demands the combined support of all agencies working for the common social good. Inasmuch as the medical profession is interested primarily in cure, and since most cases of acquired hearing impairment after a certain stage fail to respond to treatment, the problem resolves itself into one of education. There must then be a close collaboration between the physician and teacher in the task of bringing about the proper psychologic adjustment which will have to be made by every victim of hearing inacuity. Since the psychologic damage of poor hearing is really a greater damage than deafness itself, the greatest task falls to the lot of the teacher or educator. The educator must then accept the responsibility for a program of (1) finding the children whose hearing is impaired, (2) preparing those with hearing losses, together with their parents, for the psychological factors which will accompany progressive hearing inacuity, (3) referring positive cases for medical treatment, (4) providing supplementary educational advantages to compensate for the defect, (5) watching for favorable or unfavorable tendencies in regard to social adjustment, and finally (6) guiding those with marked hearing losses into favorable vocational training for happy years ahead. This indeed is a challenging work of service.

Reading References

Textbooks:

Fletcher, Harvey. Speech and Hearing. D. Van Nostrand Co., N. Y.

Phillips, W. C. and Rowel, G. Your Hearing - How to Aid and Preserve It. Appleton Co.

Pamphlets and reprints:

Bonnell, Baker. The Muskogee Program for Elementary School Children with Deficient Hearing. Reprinted by Graybar Electric Co.

Wright, Betty C., Pioneering in the Interests of Hearing Handicapped Children.

MacFarlan, Douglas, M. D. Now Is the Time to Conserve Hearing. Penn Mutual Life Insurance Co.

Warren H. Gardner, Ph.D. A Hearing Conservation Program (1940)

Gardner, Warren H., Ph.D. Instructions for Conducting Audiometer Tests (1940)

Report of the Committee on Hard of Hearing Children of the American Society for the Hard of Hearing for the School Year 1939-40.

Ronnei, Eleanor C. Practical Hearing Health Education for the Primary Grades.

MacNutt, Ena G. The Hard of Hearing Child in School

Fishbein, William I. The Child's Ears (1940)

Tritt, Jessie A. The School as a Unit in a Program for Better Hearing.

Other sources:

Davis, Elwood C. and Lawther, John D. Successful Teaching in Physical Education, Chap. X. Prentice-Hall, N. Y.

Waldman, John L., Wade, Francis A., Aretz, Carl W., Hearing and the School Child, Philadelphia: Volta Bureau auspices. Washington, D. C. (1930).

Brown, E. V. L., Bothman, Louis, Crowe, Samuel J. The 1939 Year Book of the Eye, Ear, Nose and Throat, Part II. Chicago, The Year Book Publishers,1940.

Fosdick, Harry Emerson. On Being a Real Person. Reader's Digest Condensation, March 1943.

DiCarlo, Louis M. An Educational Program for Hearing Handicapped Children, The Lip Reader, Oct. 1942. 1201 16th St., N. W., Washington, D. C.

BASIC ENGLISH

I. A. Richards, Harvard University

I stopped off on my way from Cambridge at Phoenix, Arizona, to meet the instructors who at Luke Field are teaching the pilots-to-be of the Chinese Air Force enough English to make instructions in flying possible. Imagine, for a moment or two, what their problem is. Many of their students have hardly a working word of English, can hardly understand anything, can hardly say anything intelligibly. They have four or five weeks in which to be given some sort of minimum outfit of simple working English through which all the rest that they have to learn can be taught. After that they are so deep in technical instruction and in the very arduous routine of a pilot's training, that there is very little time left for the study of English as distinct from study of the subject matter they must master. Some of the instructors were eloquent on the situation. Very soon they are up in the air with their students relying on a set of guesses as to how much is being understood as the basis for the confidence they have got to feel and to instill. Not much later, the student is up in the air alone, dependent upon what reaches his understanding -- through his earphones, moreover -- to keep him alive. Later on, one terrific morning he gets into a P40. At 300 m.p.h. there are only split seconds in which to act on what you think the man in the control tower is saying.

It is worth noting here that English is certainly going to be the language of the air ways in the immediate future. Who will have the places, the plants, the planes, and the personnel? The United States and the British Commonwealth of Nations. Between them -- and, we hope, together -- they will have to put that great piece of international organization through. It will be no attempt to subdue the other nations, and Russia, of course, will be deeply involved. But it is the English-speaking world which is producing most of what is needed for running the airways, and that very fact settles for the time being the question of what the common second world language will be. In the air, in international flying, between plane and control station, there is not time for more than one language. Every man and woman in international flying will have to have enough knowledge of English to give and take directions -- about landings, for example, and weather conditions and a hundred and one other things -- in some sort of English, some sort of safe working English. Without that amount of English, how is the safe operation of the airways going to be possible?

Instructors in English have one great advantage under such conditions. Incentive is not lacking. And they have another advantage. Unnecessary bits of English get cut out. There is no time to teach anything but a streamlined working English aimed solely at the business in hand.

It is this last fact which has led the instructors at Luke Field to turn to Basic English as a help in their work.

Now let me say -- for those of you who have not come across it -- what Basic English is.

It is a system of English words used in the regular forms of normal English.

It is those words in everyday English which taken together will do the most work. It is the smallest number of English words with a wide enough covering power, between them, to let a man say almost everything -- well enough for his general day-to-day purposes in all the range of his interests -- in business, trade, industry, science, medical work....all the arts of living and all the exchanges of knowledge, belief, opinion, and news which are what a language chiefly has to take care of. It is a small-scale language with only 850 head words in it. It may be printed on one side of a bit of business notepaper. It is a pocket language, in fact. Naturally, if you go into special fields -- in science, industry, trade, or sport, or into the Army or the Air Force -- this pocket language will not be enough. You will have to have other words in addition for the special needs, whatever they are. So, for example, the teachers at Luke Field, in writing (in Basic English) their Basic Lessons in the Link Trainer have put in about a hundred words in addition to those they are using from the Basic List. If you were teaching farming, or fishing, or engine driving...you would do the same -- make use of whatever special words in addition seem necessary for smooth going and clear teaching. But here is the point: the framework, the supporting structure for these special words, would be given you by Basic English -- for that has the necessary words, the words which are of most use in English whatever we are talking about.

Now what is this Basic like? Well, it's like this. You have been hearing nothing but Basic in my account of the system. When I said, "Let me say what Basic English is," I went into Basic, and I have been keeping to the Basic World List from that point till now. This is Basic. It is not very unlike everyday, full, unlimited, complete English, is it?

I am not going on in Basic through the rest of this lecture. That might make it unnecessarily dull, monotonous, and boring. For the same words would be coming back again and again in a way which could be painful for you and for me. There are so few words in Basic. There are only sixteen verbs (and the auxiliaries may and will). So one or other of these verbs comes back in every sentence. That, of course, is its great advantage for the foreign learner. He can be certain in conversation that keeps to Basic that he will know the key words in every sentence that is said to him.

Incidentally, this dull and boring character of Basic -- for born English speakers -- is the answer, simple and conclusive, to those odd people who fear that all the world will lose its English through Basic and come to talk nothing else. They little know what a tremendous hunger for a larger vocabulary--what a keen delight in the manifold marvelous virtues of myriad words -- a little discipline in Basic, a little spell in the paddock, will arouse. There are many people who profess doubts about Basic, without knowing anything about it. They are sure that it will be the death of the language or that it won't work, or that the foreigner will find it harder than unlimited English, or that English speakers will find it harder still than foreigners.....they have all sorts of silly certitudes which are as likely to appear in serious-looking articles as in ordinary prattle. Yet Basic is no longer a proposal or an experiment; that stage was over ten years ago. It's now a tested and working fact. The first step for a theoretical critic is surely to see how it works -- not to invent reasons why it shouldn't.

Some of these invented difficulties about Basic, however, supply light relief. Here is Dr. Alfred J. Lotka, a word-counter, writing in Journal of the American Statistical Association[1] (as summarized in the press, which very possibly have done him injustice in their summaries and quotations). The article[2] is full of points for a reading conference to consider. For example:

> "As Lotka sees it, our language comprises two classes of words. One of these he calls 'Berlitz words' because they can be defined by pointing to an object by the Berlitz method. The second are context words, which can be defined only by examining the contexts in which they occur. 'Ghost' is such a context word. To Lotka it is a counterfeit 'smuggled into the circulation of linguistic currency'."

He seems to suppose we could somehow get along without names for things we couldn't point to! But here is the passage I want:

> "Lotka points out that it (Basic) is more easily learned by a foreigner than by an Englishman, for the reason that the Englishman has to unlearn thousands of words which are unnecessary in Basic English."

Just think that over for a moment. I know quite a lot of words and expressions which I wouldn't dream of using here. I expect you can guess some of them. I won't say there are thousands of them, but there are quite a number of which it is true, I think, that our Chairman wouldn't let me go on if I began using them. I'm not exactly unlearning them, am I, if I refrain from using them, say, about this sort of nonsense. I know not what recondite mysterious connection holds between statistics and stupidity. But I sometimes think it can't be only alliteration which links them in my mind.

But to be practical, it is not hard, for anyone who puts two or three days' work into it, to learn to keep within Basic English in writing, if he wants to. Of course there is no reason for keeping within Basic unless you have some special purpose in view. No one has ever suggested we should all take to Basic all the time. Heaven forfend. But in talking to beginners in English -- in running international airways -- and for certain ways of studying complete English to which I shall be coming, Basic is useful, and it is being used.

I want first to say a few things about the way Basic was designed to be specially easy to teach. I left that side out in my short account of what Basic is. It is not only a minimum outfit of English for the beginner, a light equipment which will serve him over a wider field of his interests than any other language of the same scale. It is the outfit which can be most easily given him through teaching. And it is this which gives it a special interest for flying instructors and perhaps for a Reading Conference. For the very things which make Basic easy for a foreign learner also make it

---

1. Some reflections, statistical and other, on a non-material universe. Am. Stat. Assn. J. 38:1-15, Mar. '43.
2. New York Times, May 2, 1943, Section IV, p. 13, ed. 5.

useful as an introduction to reading for English speakers, -- not only for adult illiterates, but for children too, and especially for certain types of retarded readers.

How is Basic made easy? The essential point is this: the key sentence patterns and the vocabulary are arranged for Basic so that their meanings may be progressively presented visually and kinaesthetically. We can see and do what the sentences mean as we read and say them. That is the secret in teaching the beginning of English and the beginnings of reading in English.

For example. The Basic verbs (apart from be, seem, have and do) are verbs of action. They are give, get; come, go; put, take; keep, let; make, see, say, and send. All these lend themselves -- in their key central senses-- to pictures and performances. Most of them are verbs of the simplest fundamental bodily actions. Similarly the most useful preposition-adverbs (apart from for and of) are -- as Basic teaches them -- words concerned with positions and directions in space. Their key central senses are spatial, and their innumerable other uses are mostly metaphors and extensions from these key senses. C. K. Ogden in inventing Basic -- extracting it, rather, from full English -- went to the trouble of arranging the uses of these words so that they are made as clear and intelligible as possible. This was a unique contribution to the study of English. If the central, key, physical senses of on, in, at, up, down, and the rest of the twenty Basic 'directions' (as Ogden calls them) are clear, the other uses are, most of them, not hard to understand. You can see how and why they have those uses. If the central key physical senses are not made clear, then the whole preposition-adverb system of English will seem only a confusing irrational collection of idioms -- brute facts of the language which no one can put into intelligible order. Order is the secret here. Teach the physical, visual, performable, meanings first, and then most of the other uses will be intelligible. Those that will not be intelligible Ogden put aside and kept out of Basic, or postponed to the very tail-end of the teaching process.

The detail of his recommendations on these points will be found summarized in his little book, Basic Words[1] -- the indispensable guide to the Basic uses of the words on the list. This was a sort of work in lexicography and pedagogy which no one undertook systematically before Ogden and it was quite half the labor of designing Basic. But it was worthwhile labor. Examination of this little book will give you some notion of the order which has been brought to English study by Ogden's analysis. And you may rest assured that academic opposition to Basic which (as most of it does) fails to take this book into account or to show any acquaintance with the ordering of English achieved there, is opposition for opposition's sake.

Thanks to this plan of starting from visual performable meanings and to the systematic economies of Basic, it is possible to write texts using Basic which are very much more smoothly and gently graded than any which have been designed hitherto -- texts in which the "grading" becomes an ordered organic

---

1. Charles Kay Ogden. Basic words, a detailed account of their uses (Psyche miniatures, general ser.). London, Routledge, 1932.

sequence where each passage prepares for what follows and systematically employs all that has gone before.[1]

This visual character of Basic lets us do still another thing. That is to make real use -- in teaching the very beginnings of English, the first steps -- of sound motion pictures. Enormous economies in time, effort, and money are possible here through their aid. A pioneer effort in that direction-- a white top, covered-wagon sort of trip rather than the streamliner's journey into English which finished films are going to make possible -- was made last year at the Walt Disney studio. This test reel is only a rough sketch of an idea as yet, but enough has been established by means of it to warrant the development of a series of Basic English teaching films in the very near future.

Let me close by saying a few things about Basic as a help in reading -- at all stages from the first struggles of the illiterate to the exploration of a nice question in the interpretation of Shakespeare, the Bible, or Plato. I mention these three because among the 130 or more texts in Basic (or very near it) you will find a New Testament, a version of Plato's Republic, and Julius Caesar with a Basic version on the opposite page and a powerful battery of notes in Basic. (Also the passages, in Basic, from North's Plutarch which Shakespeare took so much from.)

To begin with the illiterates, it is worth remembering that something like two-thirds of the human beings on this planet are unable to read our sort of alphabet. Many of them have never been introduced to any alphabet at all. Great numbers of adult non-readers are creating serious problems even in this country today. We have found in Massachusetts that the text, Learning the English Language, which presupposes literacy, can follow for illiterates upon a 40-page illustrated pre-primer which teaches reading from the very beginning.[2]

Higher up the scale we have found, as I mentioned, some interesting uses of this text, Learning the English Language, with various types of retarded readers -- particularly those whose difficulties spring partly from bilingualism. Higher up the scale <u>much</u>, are the uses of Basic in the grades, as a technique for the exploration of meaning. These again I will merely mention because they are somewhat fully discussed in Basic English and Its Uses,[3] in Chapter 6 especially. But the main part can be put very simply. Basic gives us a way of bringing out -- for thought -- all the questions of <u>degrees of comprehension</u>. All reading programs have to talk about comprehension. But "comprehension" is an inadequately used term in much work on reading. Comprehension tests don't often enough concern themselves with the quality or degree of the understanding they are addressed to. We are too often content

---

1. An example is: Cambridge, Mass. Orthological institute, inc. A book for men and women of all countries, with teacher's notes. Book 1. Houghton, Bost., 1942, $1.00. (Cum. Book Index entry).
2. A photolithographed experimental edition of this text, Words on Paper, is obtainable from the Harvard Commission on English Language Studies, 13 Kirkland Street, Cambridge, Massachusetts. (Price, 40 cents)
3. Ivor A. Richards. Basic English and its uses. 1943. Norton.

if the reader can just reproduce "facts" without caring whether he gets the implications. And the implications, of course, are everything -- are the meaning. It is as much as if we knew a man merely by knowing what his name is, or by having shaken his hand, and as if all the deeper sorts of knowing were of little account in comparison with that.

Basic, as a technique of controlled paraphrase, and in other ways, can help us with the deeper sorts of understanding. It does so, not through giving us a clearer, less ambiguous statement of what some fuller sort of English has said. That isn't the way it works. After all, the Basic words are those that will do the most work -- the words that will combine to say the most things. They are the most resourceful words in the language, the most versatile words. As I tried to suggest in How to Read a Page, the key words of Basic cover all the ideas we most need in studying anything. But because they are so versatile we must not trust them blindly. And in fact we do not, whereas we all do trust more specialized, less versatile, words much too blindly. We think we know their meanings when we only know the words. Basic forces us back to the versatilities of words and gives us practice in them. That is its claim in this higher field of the cultivation of comprehension. It makes us think, and in this field at least there is no healthy substitute for thinking.

APPLICATION OF ASTRONOMY TO PRESENT-DAY TEACHING PROBLEMS

Robert S. Richardson, Mt. Wilson Observatory, Pasadena

Certainly one of the most embarrassing moments in a teacher's life occurs when confronted by the query: "What is the use of this subject, anyhow? What good is it going to do me after I get out of school?"

To the teacher of astronomy this question is especially awkward. Because if he is strictly truthful, the answer in general must inevitably be: "None whatever." One can have a long and successful career without knowing a bit more about the heavenly bodies than did a citizen of Hattusas in 4000 B.C. In fact, he need not know nearly so much, since the ancients relied upon the stars for guidance much more than we do today.

Under the pressure of war we have become very essential minded in our attitude toward education. The question may be raised with increasing force, Why study astronomy? Why bother to learn about an object a thousand million miles away in space?

Right now at least we can give a very definite answer to this question. It is simply this: If you want to get a bomber from California to Hawaii, or from South America to Dakar, or from the Aleutian Islands to Tokyo, you must understand the fundamentals of practical astronomy. That is why so many young men in uniform are intensively studying such apparently useless subjects as the hour angle of Mars, the declination of the sun, and the altitude of Dubhe. For navigation by the stars, or Celestial Navigation, is of the utmost importance during time of war, in making long flights over the ocean when there may be no radio beams or familiar landmarks for guidance. But as long as the navigator can see the sun or stars, he needs only a few minutes in which to find his position with all the accuracy necessary. To one who understands their motions, the stars are a never failing guide.

The basis of celestial navigation can be readily taught to any alert child or adult by means of what might be called "astronomical calisthenics." It makes astronomy into a competitive game instead of a lesson in the geometry of the celestial sphere.

It may be played by having a student, or group of students, stand at attention facing the north. The instructor calls the name of some point in the heavens which the student must indicate as quickly as possible.

For example, at the word "zenith" a student should point straight overhead. The direction of the nadir would be shown by pointing straight down. North is directly ahead; east or west is indicated by facing a half-turn to the right or left, respectively. South is to the rear.

The great circle of the horizon is shown by raising the arms to shoulder level and sweeping them backward and forward parallel to the ground. The celestial meridian is demonstrated by facing east (or west) and waving the arms up and down from the sides until they touch overhead.

After the basic points and circles of reference in the sky are thoroughly in mind, it is fairly easy to proceed with the location of stars by means of their celestial coordinates, such as altitude, azimuth, and hour angle.

At first these terms sound extremely formidable, but that is merely because they are unfamiliar. In reality, they are not much harder to grasp than up and down, right and left.

Celestial navigation requires no mathematics beyond algebra and trigonometry. Recently it has been simplified until plain arithmetic is sufficient. But it must be good arithmetic. Students inducted into the army have been severely criticised for their inability to handle numbers quickly and accurately. When the objective is Berlin or Tokyo, slipshod, hit-or-miss arithmetic absolutely is out. It is not long before the student discovers that adding, subtracting, and multiplying in a systematic orderly way is a real pleasure. You get the right answer so much easier that way!

It would be misleading to over-emphasize the few fields in which astronomy has practical applications. Rather the emphasis should be devoted to regarding the sun, stars, and nebulae as vast scientific laboratories where we can study the behavior of matter under conditions impossible to reproduce by the most elaborate technical apparatus available. With his powerful instruments the astronomer can analyse the behavior of iron, nickel, copper, hydrogen, oxygen, and dozens of other elements, not as we know them on earth, but stripped down to electrons and charged atoms, under temperatures as high as 50,000° F, where the density is millions of times less than the thinnest of mountain air.

Three centuries ago astronomers attempted to explain the motions of the planet Mars. To explain these motions Sir Isaac Newton was forced to invent new mathematical processes called the calculus. Today engineers make use of the calculus as a matter of routine in designing bridges, radios, and airplanes.

Who therefore can say what applications may be found years hence from discoveries of the stars some astronomer is making tonight?

EVALUATION AS A TEACHING TOOL

May V. Seagoe, University of California at Los Angeles

Teachers have long sought means of determining their own efficiency. They want to know whether their efforts are bearing fruit, whether the impression that a grown child is gaining will bear analysis, whether some modification of instructional technique is desirable. Such questions indicate a desire for techniques of evaluation. The teacher wants to evaluate herself just as specifically as she evaluates the performance of her car in terms of miles-to-the-gallon-at-35.

1. Importance of evaluation in teaching

A still more important, yet often neglected, function of evaluation is that of providing the child with information about his own progress. He, too, wants to know whether he is gaining, to watch the mileposts go by. There is the best of experimental evidence that this is true. Judd, in his pioneer study, showed that practice without knowledge of results does not result in learning, and later investigators have repeated his study with similar results. Evaluation is, then, not merely a method of measuring teaching outcomes but also an integral part of the teaching process itself: without evaluation the child makes little progress.

Research shows, in the second place, the more specific and detailed the evaluation the greater is the progress. The child needs to know not only whether he has or has not achieved his goal but also how far from perfection and in what direction he deviated. Evaluation should, then, be in terms of specifics instead of generalities.

In the third place, the bell-right and bell-wrong studies seem to show that knowledge given in positive form is more effective than knowledge given in negative form. It is better to say "Did you consider this" or "That word is 'when'" than to say "Your mistake was in doing this" or "No, not 'then'." An approach through stating what would be good or right is superior in result to pointing out an error.

In the fourth place, there is evidence that the degree of effectiveness of knowledge of results varies with the learner's estimate of the possibility of success in that situation. If he knows he usually fails in such cases, the emotional factor will hamper full use of his knowledge of status. The situation should, therefore, be so adjusted that the gap between learner's ability and goal is not too great for him to bridge.

Evaluation, then, is an essential part of every learning situation, for child as well as for the teacher.

2. Evaluation and teaching objectives

Good evaluation is summarized in a play on two meanings of the word "objective." Good evaluation reflects the objective or goal of teaching, and it is as objective or impersonal as possible.

Tyler analyzes the steps in constructing an instrument of evaluation first of all in terms of definition of objectives. That is the most difficult

step of all. Once the objective of the instruction is clearly and specifically stated, teachers are asked to record ways in which the behavior of those who have and who have not reached that goal will differ. A list of criterion situations is thus prepared. Then the construction of items or observation techniques is a matter of simple deductive reasoning. The important, yet frequently neglected, point is that without a clear statement of the teaching goal, no adequate evaluation is possible.

Applying such an analysis to reading, what are the teaching goals? In the first place, the child must learn to recognize common words easily and to associate meanings with them. Second, he must be able to understand relationships between words, to comprehend sentences and paragraphs in a wide variety of subject matter. Third, he must be able to do this fairly rapidly in order to meet the needs of daily living. Fourth, he should be able to read to others intelligently and smoothly when a normal oral reading situation presents itself. Finally, he must develop such attitudes toward the reading process that reading is an integral part of his behavior outside of school, something which he will constantly use as a continuing source of education as an adult.

Some of the reading attitudes in which teachers are interested will serve as illustrations: First, the child must learn not only to read, but also to like to read. Only if reading has positive associations will he seek it voluntarily. That is why teachers are careful to provide as much success, praise, and feeling of gain as possible, and to select relatively easy material and to avoid all forms of reprimand or punishment associated with reading. The child does learn to read under negative motivation, but he avoids reading when he may freely choose a way to spend his time. Second, the child must think of reading as a means of finding out answers. When a question arises he should learn to turn to authority for information and books are invaluable in such a case. Third, he should develop the habit of turning to reading as a normal life activity, not only as a source of pleasure but also as a means of gaining breadth of maintaining a contemporary point of view and of continuing his education as an adult.

3. Suggested evaluative procedures

So much for teaching goals. The evaluation itself should be as objective and impersonal as possible. Studies of grades show how unreliable marks on general qualities may be, and how much bias may color the result. It is a distinct step forward when the teacher or child is able to leave the phrases "I feel" or "I think" and use instead a direct statement of fact uncolored by opinion.

The first choice for evaluation is, of course, the standardized test. In its construction there is a statement of the ability to be measured, construction of items or sample situations, analysis to eliminate poor items, provision of norms through actual administration, and estimates of validity and reliability to gauge its usefulness. The well constructed standardized instrument is comparable in its field to the best instruments used in medical diagnosis and superior to such tests as basal metabolism.

Criticism of such tests most often stems from faulty selection of an

instrument or from over-interpretation of the results. Among the objectives of the reading program only a few lend themselves to the use of standardized tests, and therefore evaluation is seldom complete without the use of supplementary techniques. If such techniques are not used, the results should be interpreted within the limitations of the tests used.

Standardized tests are particularly useful in evaluating progress in word recognition and vocabulary, comprehension, speed and oral reading. In the primary grades such tests as the Detroit Word Recognition, the Garvey Primary Reading Test, and others provide useful samples of the child's gain at the end of the semester. In upper grades such tests as the Sangren-Woody, Stanford and Progressive measure achievement in comprehension as well as vocabulary, and in some cases in rate of reading as well. The Standard Test Lessons in Reading, though not standardized tests in the conventional sense, do provide comparable norms and daily work material that are useful in helping the child measure achievement at shorter intervals. In oral reading the Gray paragraphs are still most helpful.

A second type of evaluative instrument useful for teachers is the informal test. It is constructed by the teacher to measure outcomes in specific situations, and is therefore more flexible and more adaptable. It has the disadvantage that it lacks careful standardization and has no norms, but from the instructional point of view it is useful.

The speed test is an illustration. The teacher selects some new material, easy and interesting, of uniform difficulty throughout, and from time to time has the child read from that material for a carefully timed interval and compute his rate. The chief value of such a technique is motivational through knowledge of results rather than specific practice.

Another illustration is the "Said-For" test used by Keller in connection with non-readers in the Los Angeles schools. There the teacher asks the child to read a standard selection just above his level, recording each substitution, omission, mispronunciation and insertion. Patterns of errors emerge, an instructional corrective is applied, and on repetition the child eliminates that type of error.

Similar teacher-made tests are often made to cover special types of reading, such as script, or arithmetic problems, or science or shop material. The analysis of specific errors has great instructional value.

A third type of evaluation is observation, either controlled or free. Wrightstone's study of pupil-teacher participation in connection with his analysis of newer educational practices is a good illustration of controlled observation. First of all the behavior to be observed is carefully defined, then for stated time intervals the child is watched to see to what extent he shows that behavior. It is a process requiring some training and careful preliminary preparation, yet one useful in estimating many non-verbal learnings. It would be suitable, for example, in judging the attitude of adopting reading as a leisure habit. Over a period of time the teacher might inject a twenty-minute period of free time at unannounced intervals and notice how many children turn to the bookcase or to a book kept in the desk for use of that time.

The teacher's chief reliance in evaluating attitudes is, however, free

observation or the informal record. A record of library withdrawals is significant for not only presence or absence of reading interests but also for analysis of the patternof those interests. The anecdotal record is similarly specific. In that case the teacher keeps a card diary enumerating by dates what the child does that seems to her to indicate status with reference to a given goal. Perhaps a child who, on September twentieth, groaned when reading was mentioned, on November first came to the reading group somewhat passively, on February thirteenth asked his first question about the outcome of the story, and on the last day of school brought in a book he had voluntarily selected for summer reading. Such a record, though informal, is objective in the sense that it reports occurrences and not the teacher's reactions to them. It is valuable for parent-teacher conferences as well as for establishing points of progress for teacher and child.

A fourth type of evaluation, still less controlled, is found in the usual class discussion. The value of that discussion is almost wholly instructional and motivational, yet none the less real. When the child presents a selection he has chosen to read, the questions asked by class and teacher will help him to see himself mirrored in their understanding, and their suggestions will stimulate additional achievement. When certain information is desired, the extent to which the child turns to books and uses them effectively in getting that information is significant.

Of course no one teacher will use all these methods every week or even every semester. They constitute simply a set of tools from which the teacher will choose the one useful for the specific task. It is important to remember that the instrument of evaluation must be suited to the teaching goal. Properly used, evaluation promotes and stimulates learning.

TEACHING THE DEAF AND HARD OF HEARING
PROBLEMS OF READING AND LANGUAGE

Irene T. Short, Principal, Mary E. Bennett School, Los Angeles

While I am telling of some of the problems of our deaf and hard of hearing children, I want you to put yourself in the place of the child. This is a very difficult thing to do, but only as we see these problems from the standpoint of the child can we hope to solve them. As I tell you of the language difficulties, the endless confusion of words, the baffling constructions of sentences that must be straightened out for these children, please say to yourself, "Does the child with whom I am working have this same difficulty?" If at the end of this conference you have a better understanding of the deaf and hard of hearing child our time shall have been well spent. At least you will be able to breathe a little prayer of thanksgiving that the children with whom you work have hearing and so with renewed courage take up your work again with the normal child.

The deaf child presents to the student of psychology an unusual opportunity for research. Here is an individual, who, until he is taught to talk and read, lacks those word conceptions which are used by normal people in the growth of their thought processes. Education depends so largely upon communication that we must find an effective mthod for developing a comprehension of written language. (Thompson)

With these children there are three distinct and separate classes. The following definitions were adopted in 1939 by the Conference of Executives of the Schools for the Deaf and Hard of Hearing:

1. The Deaf: Those in whom the sense of hearing is non-functional for the ordinary purposes of life. This general group is made up of two distinct classes based entirely on the time of the loss of hearing.
   a. The congehitally deaf -- those who were born deaf.
   b. The adventitiously deaf -- those who were born with normal hearing but in whom the sense of hearing became non-functional later through illness or accident.
2. Hard of Hearing: Those in whom the sense of hearing although defective, is functional with or without a hearing aid.

We shall speak of the adventitiously deaf child first. Of these three classes we have more of an emotional but less of an educational problem than with the congenital deaf or the hard of hearing. Imagine, if you can, what it would mean to any one of us to wake tomorrow morning and have absolute silence around us. A new way of living must be worked out, for the whole course of life is changed. Emotional rehabilitation must take place. Educationally, lip reading must be taught, the speech must be kept as normal as possible, otherwise these children can proceed as the normal child does.

With the hard of hearing child many factors enter the picture. These contribute to the severity of the problems confronting us. Most of these children suffer from earache, head noises, have poor resistance to colds and flu. They are nervous, high strung, and often irritable. The adverse conditions under which many of these children work are to blame in large part for the emotional reactions. In the regular classes we find that often the hard of hearing child has been inattentive, listless, and lacks power of

concentration. He is considered dull and rather a hopeless case. If he becomes defiant and adopts a "don't care air" he becomes a bully and fights his way through. If he is shy, he withdraws from the group and becomes a social problem; if he is conscientious and puts forth every effort to succeed and then fails, he is crushed by the unfairness of it all and resentfully build a wall around him for protection from a world that does not understand. In every case he is falling behind the members of his group and is developing a feeling of inferiority.

Among the children who come to us from the regular classes, we find that very few of them are able to spell, nor have they any knowledge of phonics to help them with new words. It isn't because they can't learn these, because in most cases, they do after they come to us. Confusion comes, also, when the child can spell the word using the name of the letter instead of the sounds. In this case, he can spell but not pronounce the word.

We use very simple vowel and consonant charts; no diacritical marks are necessary until the pupils begin the study of the dictionary. Nothing worked out by mere man could cover all the pronunciations of the English language, but we find that these charts give the children a very good foundation.

Impaired hearing leads to hazy concepts and confusion. Hard of hearing children often hear just the key words in a sentence, so they speak in the same way, leaving out many of the little words such as, is, on, and, etc. They read as they talk, using their natural unnatural speech. Words that sound alike, as "very" and "fairy" are often used one for the other. Not only in reading, but in all subjects we find that these children are wandering around in a fog. Please believe me when I say that I am not here to criticise the work that is being done in the regular classes; the children who come to us are a very small percent of the pupils in your classes. But we work with the children who have failed in your classes and we are vitally interested in the reasons why they fail.

One of the chief reasons is the lack of understanding on the part of the child. We hear so many of the children say, "Oh, that's easy, now that I understand it." "I didn't know that was what the teacher wanted me to do." Or as in the case of one boy who didn't want to go back to the regular classes when his hearing had improved, because "this is the first time I ever understood my lessons." I am sure that you will want to know that he wasn't sent back until he was sure of himself; to be exact, not until he told us he was ready to go back "because he could do harder problems than any guy on the block."

May I state here that the longer I work with hard of hearing children, the stronger my conviction is that there shall be no arbitrary standard of percentage of loss of hearing at which the child shall or shall not receive special help. I have known children with almost a total loss of hearing who have been able to carry on in the regular classes, while children like Ralph, who is mentioned above, with only a small loss of hearing, are utterly lost in the large class rooms. After all, our schools are for children, to meet their needs. Why should they not receive full consideration?

The tenses are a problem to hard of hearing children. They do not always hear the difference in the time element presented through the correct form of the verb. They use the wrong form of the verb in their own speech and

so do not comprehend the meaning conveyed by the correct form in their reading.

Many of these children have poor work habits. If they are quiet in the ordinary class room, they get by. Usually they have copied reams of lessons which they do not understand. It takes a long time in some cases to get these children down to good sound work. This may sound like the old formal school and I must confess that much of our work is done in the formal way; there are so many things that are learned only by constant repetition and drill.

The hard of hearing child often has language enough to express his own thoughts, to tell a story, or tell what has happened, but are unable to answer questions or to reason. With the deaf child we build up, with the hard of hearing child it is often a case of tearing down and rebuilding, else we are trying to build something solid and permanent on a very weak foundation. More and more of these children are being sent to us as soon as they enter school. This is striking evidence that teachers are more alert to the child who is unable to do the work with the normal group. Thus, the child will not have to become a failure before he is given the help he should have from the first days of his school life.

There are many similar problems that both the deaf and hard of hearing children have to face, so I shall speak of these at the same time. First, let us try to get a true picture of our deaf child. In the majority of cases the deaf child is a healthy child. He was born deaf or lost his hearing at such an early age that there is no outward sign of his handicap. With wise parents, he need not be made to feel that he is different from the other members of his group and in his early years he does not suffer from the emotional upsets that come to the hard of hearing child. But on account of the loss of speech and its accompanying mental development, deafness is the greatest of physical handicaps, educationally. Remember, I am speaking of those who are born deaf.

Let us then state some of the major differences between the deaf and the normal hearing child entering school at the same age, without any previous training other than that received in the average home.

Hearing child	Deaf child
The initial period of book reading is, throughout, one of teaching the pupil to make the transition from the oral symbol to the printed symbol.(Patterson)	The deaf child has no oral symbols.
Comprehension is due to association. The richer the association, the greater the comprehension.	No association with oral symbols
Meaning of words as doll, boy, girl, etc., are known to hearing child.	Meanings must be learned as well as forms.

New words are recognized from print or script only.	Meanings of new words must be learned first, then word must be recognized on the lips of the speaker as well as from the script and print
Hearing child works from sentences, to phrase, to word, to elements of sounds.	Deaf child has been taught speech from elements, to word, to phrase, to sentence.
One can appeal to the child's interest by telling a story before lesson is attempted.	Impossible on account of lack of language to comprehend story.
Vocabulary, approximately 1000 words.	No vocabulary
Oral reading important. Hardly anywhere else than in oral reading may a teacher, of at least the first years, feel so confident that she is properly directing the learning process. (Patterson)	With little or no speech, the deaf child has little use for oral reading.
***No teacher can be too sure that her pupils are forming correct and economical mental habits without the aid of frequent, varied, and skillfully conducted oral work. (Patterson)	The deaf child has learned the oral symbols through speech training; we are not sure that his mental concept is clear even though he can pronounce the word.
The child has gained in five or six years such a mass of knowledge as he can never hope to equal in the same length of time. He has progressed in 1. Mastery of the mother tongue. 2. Gained control over bodily movements. 3. Brain has recorded impressions of form, color, texture, sound. 4. Basis has been laid for judgments of quantity, direction, and relationships. 5. Some knowledge of social behavior acquired. 6. Large fund of useful information at his command. (Miss Moore, The Primary School)	Deaf child must make up this loss in the next nine years in addition to the regular work of the kindergarten and first six grades. 1. No. 2. In most cases. 3. Perhaps all but sound. 4. Doubtful. 5. In most cases, except when child has been "spoiled" on account of his handicap. 6. No.

One may well ask, "Where and how shall we begin?" And our answer is, "Just as the hearing child is taught, babbling, elements, words, sentences." For we must go back to the very beginning with our children. The state of California permits us to take our children when they are three years of age, but not many schools do this.

Throughout the years of teaching one bears in mind the question that was once asked a teacher. "How would you describe an orange to an Eskimo, if you did not have a real orange for him to see, feel, and taste?" Are some of our explanations to little children as vague as this would be? It has been said that education is the process of drawing out, but with us it seems to be the process of pouring in.

Modern education has done much for the deaf child in giving him books suited to his vocabulary. Such stories as we had years ago in the primers as "The Little Red Hen" and "The Sky Is Falling" were absolutely impossible for the deaf child to understand. By the time the child's vocabulary and language were ready for the story, the child was too old to enjoy it.

Take our new books. Among the first verbs we teach our deaf child are: saw, put, ran, jump, went, etc. In the pre-primers and primers that we use now all the lessons are built around these words. Then, too, the question forms, Where? Who? How many? and What color? are first on the list and these are also used in the new books. It is such fun to find in books the same things that you are learning to say and to lip read. The pictures are delightful and cover almost every phase of a child's life.

Vocabulary building does not mean teaching the meanings of isolated words, but an understanding of connected language. It is much easier to teach words with concrete meanings. We have no trouble with chair, table, walk, etc. Words such as home, like, and want are most difficult, but they are words that he must have.

Walk and run are among the first words that the deaf child learns. Go and come are soon introduced. But to go or to come, the child may walk, run, or skip. How does he straighten this out in his mind? Mother and woman are the same. Yet we say, "Betty's mother" but not "Betty's woman." And this woman is mother to Betty but not to Jane. Utmost care must be used in this beginning work or we find that our children are like the little boy who had been thoroughly drilled in the meaning of the two words look and up. Then one day when he was told to "Look up," he looked straight ahead of him and pointed up with his finger.

Reading may become a mechanical process: the child may be able to pronounce a word but he does not know what it means; the words may be just a combination of the sounds he has learned and he pronounces the word just as we might pronounce a word of a foreign tongue without the slightest knowledge of its meaning.

It is almost impossible for the average person to conceive the difficulties that beset a deaf or hard of hearing child's way as he acquires a usable vocabulary. Even a trained teacher of the deaf is often surprised at the results when she has failed to anticipate the confusion that may arise in the child's mind. For example: a lesson on wild flowers caused

a boy to ask in a puzzled voice, "I don't understand, wild flowers, wild the same as a lion?" If like this boy, all the children would let us know what is puzzling them, we can clear up the trouble, but unfortunately too many children are befogged so much of the time that they have long since given up all expectations of comprehending the inconsistencies of our language. I once read "that probably the greatest handicap to learning the meanings of words from reading is the fact that the children don't know when they don't know."

As foreigners try to master our language they have many of the same difficulties as the deaf, but their task is not so great because they have the key of a known language and the advantage of hearing the new language spoken.

Multiple meanings of words and words used as different parts of speech are most difficult for our children to master. Perhaps we meet the word fast for the first time in this sentence, He ran very fast. Of course, there is nothing very difficult in this. But in due time we have the sentences,

That is a fast color	or	The leaves are green.
The baby is fast asleep		The boy leaves a paper on the por : every
They fasted for several days.		morning.
The fast lasted until sundown.		The train leaves at two o'clock.
My watch is fast.		The leaves of the book are torn.
That is a fast horse.		They were granted leaves of absence.

In order to clarify the meanings of words used as different parts of speech and to emphasize the use of words in sentences it is necessary to give our children some practical help in a visual sense that will teach them by seeing the correct forms over and over again what the normal hearing child learns by hearing the constant repetition of phrases and sentences. For this we use "The Key to Straight Language for the Deaf" which was worked out by Miss Katherine Fitzgerald. She was, herself, a deaf person and taught the deaf for many years, so her work was the result of years of understanding both the pupil's and the teacher's point of view. Miss Fitzgerald combined other methods that had been used by teachers of the deaf so her work is not entirely original but it is most comprehensive.

We do not teach the names of the parts of speech to young deaf and hard of hearing children, but they learn to classify the words under the symbols or question forms. These are also used to show the construction of sentences. You do not have to teach the hearing child that we say, "two large red : apples." But we do have to teach this order to deaf children, for there is no reason why we should not say "large two red apples" or "red large two apples." The teachers write these headings on the blackboard and give numerous drills.

How many:	(Adjective symbol)	What color:	What:
two	large	red	apples

Many other forms are used to show the correct sequence of words.

Natural language, to a great degree, is idiomatic, but not until you have tried to teach idioms to literal minded deaf children do you realize to what strange conclusions some of them come. In the few that I have

selected, there is not a word that the deaf child would not know, but picture to yourself what would take place if we interpreted these words with the literal meanings.

He hot-footed it home.	The boys stick together.
The thief knew the game was up.	I went to town and made a day of it.
The room was in apple pie order.	She is nursing a grievance.
The man was in deep water.	He took a street car home.

We teach children how simple it is to gather meanings from the stem words but it doesn't help much when one runs up against cuh words as homely, fasten, ducked, and many others.

In selecting or construcing reading material careful attention must be given to the vocabulary. Dr. Thorndike says that the chief force opposing comprehension is the vocabulary load. The greater the number of unknown words a child finds in a work, the greater will be the difficulty in reading and understanding the work. Dr. Thorndike has found that not more than one unknown word should appear in every two hundred words of reading material. More than that number is a definite handicap to the reader's interest in what he is reading. This is one of the greatest problems we have. Each subject has its own vocabulary which must be mastered; this is particularly true of arithmetic and much preliminary work must be done before the processes can be taken. New vocabulary, new constructions, new processes are all in one lesson.

a remnant of cloth	a yield of potatoes
calico, pennants, supplies	fare
a freight car holds	from a certain station

All of these might appear in one arithmetic lesson. Recently a teacher was almost ready to give up in despair when she found that even a simple lesson in health habits had such expressions as a sound tooth, appointment, gums, digest, all words which the child should know but most of them are words that slip away so easily because they are not used day after day.

One seldom hears a deaf child laugh spontaneously while reading. They have very little imagination, are literal minded, and few have the saving grace of the sense of humor. Mrs. Gesner, one of our teachers, has always given her pupils stories that have an amusing side, to try to fan into life any spark that might be there. The following is one of the experiences that she had one day with a group of older children. The story she told them was:

> One cold blustery day a dignified old lady was walking along an icy street. Suddenly her feet flew out from under her and she sat down so hard that she saw stars for a few minutes. A man on the opposite side of the street rushed to her and said, "Oh, Madam," did you fall?" "No," replied the old lady, "I was tired, so I sat down to rest."

Mrs. Gesner had prepared the pupils for the story by being sure that they understood such words as dignified, etc., but as she finished telling the story, not a flicker of laughter was heard. In dismay, Mrs. Gesner said to her class, "Don't you think that is a funny story?" One of the boys replied, "No, the old lady did not tell the truth."

We have always used daily experiences in the child's life as the bases of our language work. Language constructions are given as the need arises; at the same time we follow a well developed outline for language through all the elementary grades. Vocabularies are enriched through interest in the work at hand. It is "live language" not forms, rules, and constructions to be memorized and used parrot like and as easily forgotten. Original work is encouraged; we even try a poem now and then. Interest is stimulated by the wealth of material at hand. With interest plus books in which our children can find facts for themselves we hope, some day to reach the goal of which Dr. Yoakum spoke when we "read to learn, not learn to read."

In conclusion, I want to leave with you the Foreword of our Instructional Program in Reading for the Los Angeles City Schools:

"The teacher who assumes the reponsibility of guiding pupils through a program of reading must understand three important concepts: first, what is reading; secondly, what is adequate preparation for reading; and third,how do weteach reading? We define reading as a thinking process, dealing with interpretation, meanings, and understandings rather than with mere recognition of symbols, forms, or words.

"Since it is a thinking process, the ability to read requires a certain degree of mental maturity to succeed in reading performance. Since it deals with securing meaning, understanding, and interpretation of experiences, it is necessary to take experience to the process of reading as well as to secure understanding and meaning from it. To achieve the process of reading it is, likewise, necessary to master certain skills, mechanics, and abilities."

VISUAL TRAINING: A REMEDIAL READING TECHNIQUE

Peter L. Spencer, Claremont Colleges

The visual education section of this conference is to some extent a pioneer enterprise. During previous conference years several distinctive papers have been presented on various aspects of visual education, but we have not previously made its consideration a full and distinct section of the program. The present arrangement is a recognition of the growth in importance of this field.

The visual process has been widely used in educational programs. Many instructional procedures have depended so basically upon it that sometimes there is a failure to recognize that learning occurs with other types of sensory stimulation as well. Such statements as "80% of all that we know came through the eye" are typical of such a misconception. Vision is only one of a considerable number of sensory processes. It is doubtful whether they can be wholly separated one from another, but for practical reasons they may be treated separately.

In educational procedures the visual process has been considered basic. However, the customary attitude has been to use vision as though it were a possession which occurs in a finished form and in comparable amounts in most people. Of course, we have long recognized the persons who are blind or who are seriously deficient in certain aspects of seeing, but lacking these obvious conditions, we seem to have assumed that all remaining learners are alike.

Another assumption which appears to be characteristic of our previous thoughts concerning vision is that vision can be injured but it cannot be improved. We have established many school procedures and special situations for the conservation of vision but only rarely have we done a similar thing for the development of vision. It would seem logical to assume that vision ability is affected by the use we make of it. Poor uses should lead to injury and possible destruction. Good uses should lead to the retention and perhaps development of visual power. If this assumption is accepted as a working hypothesis, it suggests some pertinent changes in customary school procedure.

Human behavior is founded upon organic structures and basic functions which are normally common. We do not have to teach cells to grow. But we do need to learn how to produce appropriate growth conditions. We do not have to teach them effective ways to breathe in order to produce certain results. We do not have to teach people to perform many of the basic forms of their behavior, but it is necessary to teach them to perform these acts in particular ways and at appropriate times. Human behavior has intrinsically adoptive functions which are modified and developed through the processes of use. Good educational practice consists in bringing about these modifications and in efficiently promoting and directing the growth.

Sight is normally a native function of human development. It is not necessary to learn to see, but it is necessary to learn to see certain things in certain ways. Bringing about this development is the task of visual education. The procedure is sometimes called "visual training."

Learning to make a clear image on the retina is a fundamental part of efficient seeing. How much retardation or failure in school achievement may properly be charged against lack of ability to see clearly is not at present known. That the relationship is close and the deficiency significant seems very evident. In schools wherein attention has been paid to developing seeing ability very substantial gains have been accomplished with no evident peculiar emphasis being placed on the so-called "pedagogical" phases of learning. The papers presented before this conference on the use of the flashmeter and the studies in the use of tachistoscopic helps in reading are cases in point.

The production of a single image from the simultaneous use of two eyes, binocular fusion, is another important aspect of normal seeing. To do this efficiently must be learned. Neglect of this development may produce such disturbances as suppression, alternating monocular seeing, slow visual perception, and excessive fatigue. Simple stereoscopic techniques, ocular exercises, and better attention to the hygiene of seeing have produced good results in this connection. A well conceived and well executed program for the development of visual ability should be extremely productive in this regard. Suggestive of what can be accomplished with such programs are the studies which have been conducted by the American Research Council of Optometry, bibliography attached.

Investigations have disclosed an evident practice of developing eye-movements particularly adopted to special visual tasks. For example photographic techniques have been used to record eye-movements used when reading printed word symbols, expressions presented in the number or other mathematical symbols, pictures, maps, graphs, and music scores. Special forms seem to be best adapted for each type of task. It would seem, then, that good educational procedure would tend to assist students to differentiate these peculiar patterns and to develop them as the students work with each of the special types of materials.

Experiments have been conducted which, while not adequate to prove the value of special techniques for the development of visual ability, certainly show that work of that nature has positive indication of being fruitful. Four professional fields will need to come together in the development of such an educational program. They are the fields of medicine, optometry, psychology, and education. This conference has thruout the years made the fusion of those fields an important aspect of its program.

The efficiency of the visual process is so intimately associated with other aspects of behavior that it should not be thought of as separate. The air force has learned that visual efficiency requires particular food. Therapists observe that relaxation of excessive tension is important. The eyes may smart and vision is frequently impaired when metabolism is distorted unduly. In order properly to develop a program for visual education one must conceive of the person as a whole. Hence we reiterate our basic assumption, viz: if thru improper use any part or function can be injured, thru proper use it can be developed. Programs of visual education have shown that visual development can be attacked from many angles and that improvement does result. We propose, therefore, that the developing of efficient seeing be conceived as part of every well developed program for reading.

School instruction in reading has been largely conditioned by the prevailing conception of the nature of the reading act. When we come to define reading in terms of the actual process which takes place rather than in terms of a special stimulus for its taking place, great advance will have been made. When that occurs more emphasis will be given to making feasible the personal development that facilitates discriminative behavior.

Bibliography

Apperson, Sarah V. The Effectiveness of Orthoptic Training as a Means of Remedial Instruction of Reading. J. Exper. Educ. 9:160-166, Dec. 1940.

Worcester, D. A. The Influence of Orthoptic Training on the Reading Ability of College Freshmen. J. Exper. Educ. 9:167-174, Dec. 1940.

EVALUATION OF GROWTH IN READING

Dr. Violet G. Stone, Director of Elementary Education, Ventura County

Definition

Evaluation in general implies periodic checks on effectiveness of techniques, materials and methods in relation to prescribed objectives with a view toward improvements in the educational program. Evaluation of any given field is for the purpose of securing pertinent data concerning an individual or groups of individuals in order that better guidance in learning may be provided. It naturally follows that such a technique adequately used and interpreted tends to give psychological security to students, to the staff, and to parents.

Scope of Reading Evaluation

Since reading is related to and a major part of the entire educational program of each child, it is essential that all significant aspects of the student's accomplishments be considered in the program of evaluation. Consequently, such a program should be on a cooperative basis so that all those individuals directly concerned with the student's instruction may be aware of the problems involved and contribute to their solution.

Two phases are apparent: -- the nature of instruction and materials used and the characteristics of the reading performance of each individual. In other words, outcomes may indicate limitations either within the student or inherent in the instructional program itself.

For thorough appraisal the various aspects of the reading process must be evaluated as well as the gross areas such as comprehension, rate and vocabulary, each of which has numerous contributing elements.

Areas of Appraisal in Reading

Areas and techniques of appraisal may be organized in various categories which differ according to the level for which the program is devised, or the type of individual concerned. For the less mature, evaluation of the mechanical phases of reading is essential while for the more mature individual the facility with which the reading skills and techniques are used in subject matter fields is likely to be emphasized. Although this discussion is designed primarily for use with elementary pupils and the techniques are organized accordingly, it does not preclude evaluation in the use of basic processes. The six categories for evaluation used here are reading skills and abilities, work-study skills, library skills, literature, interests, and attitudes.

Methods and Instruments of Appraisal

Many helpful devices and instruments are available and careful use indicates rather clearly the limitations and inadequacies in the reading performance. These include well known mechanical devices for testing vision and hearing. Certain other aspects of visual acuity, muscular unbalance, fusion and the like may be measured by the Betts Telebinocular Apparatus. Standardized tests both group and individual suggest another type of evaluation materials. Questionnaires, interviews, inventories, discussions, and observations make up a series of informal methods. Each of the foregoing will be discussed later in relation to the field to which it is best suited.

More and better instruments are needed in all the phases of evaluation mentioned with greater emphasis on pupil behavior and reactions than on knowledges and facts.

Measuring Reading Skills and Abilities

This section deals with the measurement of visual and auditory habits, skills and abilities related to oral reading, vocabulary, comprehension, interpretation and use of ideas, and rate of reading.

Visual skills are of two kinds -- those affected by basic eye-movements and those dependent on visual acuity. Methods of analyzing and measuring eye movements are of two kinds -- direct observation and use of mechanical devices such as the Betts Telebinoculars, the tachistoscope, metronoscope and ophthalmograph. Direct and careful observation and the Snellen vision test reveal gross deviations from normal performance. The elaborate devices previously mentioned require the skilled technician to manipulate and interpret the findings. Where such facilities are available, the information supplements the findings from other methods, and are exceptionally important in the study of extreme cases of reading disability.

Good pronunciation and enunciation in oral reading generally indicate no need for further investigation. However, confusion of letter sounds and words and faulty articulation may suggest deficiencies in auditory perception which interfere with progress in reading. Examination of types of errors made in oral reading and observation of speech and listening habits are simplest methods for guidance. Naturally correction of faulty vision and hearing are essential before any kind of program can be initiated.

In determining extent of mastery of skills in vocabulary, three types are essential to reading success: word meaning, word recognition and word analysis. Vocabulary tests generally emphasize word meanings and are limited either to isolated words or groups from which synonyms are to be selected. Accurate measurement of vocabulary by such methods is difficult since the best synonym cannot always be identified. Informal oral testing reveals better the limitations of word meanings since content materials appropriate for each individual can be selected. Each subject field carries its own special vocabulary and consideration should be given to determine to what extent the terms and concepts contribute to the major reading problem.

Word Recognition

Word recognition involves abilities to note general configuration of the word, to syllabicate the word, to sound the letters, and to place the correct accent. Standardized tests in word recognition, such as the Monroe and the Gates, give indications of levels of achievement. Observation of techniques used by the pupil in actual reading situations provide supplementary information concerning his needs.

Word analysis is important at all levels since each child must have ability to get new words independently. Poor habits of articulation, enunciation, and pronunciation and inadequate skill in use of the dictionary indicate need for attention to word analysis at the level of the child's development. Such

exercises as those found in "Eye and Ear Fun"[1] are suitable for diagnosis as well as for remedial purposes.

Measurement of comprehension involves a wide variety of types of materials and a careful analysis of the types of responses. Frequently the total score is accepted as a measure of the reading capacity as a whole. Since comprehension is composed of many elements and functions, test results must be interpreted in terms of the major aspects measured. Studies of standardized tests and study skills reveal the following elements or components of comprehension:

(1) ability to locate information
(2) ability to follow directions
(3) ability to give general sense of paragraph
(4) ability to give direct details
(5) ability to determine whether or not a definite idea is stated
(6) ability to give implied details
(7) ability to predict outcomes
(8) ability to determine whether stated ideas are true or false
(9) ability to give reference to ideas or objects previously stated
(10) ability to select information
(11) ability to organize information

Care should be exercised in the selection of tests of comprehension and the interpretation of results in order that the actual skill or ability is identified and correct remedial treatment provided.

Interpreting and using materials read include the abilities to explain, to support and evaluate ideas, to make inferences and to draw conclusions. With the assurance that the vocabulary involved offers no handicap, discussion and elaboration of content read indicate the extent to which a child can make use of materia s. For less mature readers a definite purpose for reading set up prior to the reading exercise, direct questioning interspersed or following the selection, or directions for restatement of main ideas commonly included in the best reading texts will indicate limitations and help to develop necessary abilities.

Habits of accurate reading must be established before any attempt is made to improve the rate. Consequently, factors which influence the speed of reading must be examined. Visual factors such as poor eye movements mentioned above, inner speech, faulty word recognition and limited vocabulary bear a definite relationship to the speed at which a child reads. Furthermore, the type of material read and the purpose are regulating factors. The rate of reading fiction for pleasure is much greater than reading mathematical information for solution of a problem. Consequently, wide variations in rates of reading are common to each child.

Tests of rate or speed usually do not provide for continuous reading, and do not sample adequately various types of content. Examination of the rate at which a child reads his social science, for example, and the accuracy with which he interprets the material may reveal limitations in ability to adapt

1. Clarence R. Stone, Eye and Ear Fun. Los Angeles, Webster Publishing Co., 1943 (Books 1-2-3).

the rate of reading to the content and purpose. Variations in the length and difficulty of assignments in different subjects for individual pupils tend to develop more accurate reading habits and improve the rate of reading in specific subject fields.

Examination of oral reading performance is one of the most revealing methods of evaluation. If the pupil's grade level on oral reading tests exceeds his level in silent reading of the same materials, no further study of oral reading performance may be necessary. However, faulty habits, confusions, deficiencies in fluency, phrasing and expression are indications of necessity for more thorough study. Gray's Oral Reading Paragraphs are excellent materials for use with all levels as the sections vary from simple to very difficult. The test reveals not only specific mechanical errors but lack of expression, poor rate, and habits of word attack as well as attitudes toward reading and personality traits. Several check lists[1] are available for the informal study of oral reading performance and diagnostic tests[2] are recommended for more formal analysis. Recognition of most common types of errors revealed in oral reading gives a specific approach to the individual's reading problem. The important aim in examining oral reading is the understanding of the pupil's difficulties and their causes.

Measuring Work-Study Skills

Studying the content subjects calls for the use of several important reading skills such as thorough reading, skimming, and relating ideas. Special study should be made of the effectiveness with which the reader selects and uses the skills appropriate to the purpose and the material in hand. The reader must be able to use the method of reading best suited to the purpose and kind of material involved.

Frequent checks and evaluation should be made of the ability to select main ideas and best summary answers, to find the central thought, to organize ideas and to follow directions. Tests of these skills are incorporated in such forms as the Gates, Stanford, Metropolitan, Durrell-Sullivan, and Iowa tests and scales. In addition, appraisal should be made of ability to read graphs, tables, charts, and pictorial devices, and of skill in interpreting keys, symbols, shadings, colors, and other markings on maps. Growth should also be determined concerning the ability to locate information, to use a table of contents and an index, and to recognize common abbreviations. Few tests in these areas have been developed for use with elementary children but informal observation reveals inadequacies which should be corrected.

---

1. Paul Witty and David Kopel, Reading and the Educative Process. Boston, Ginn, 1939, p. 248.
   Albert J. Harris, How to Increase Reading Ability. N. Y., Longmans, Green, 1941, p. 107.
2. Gray Standardized Oral Reading Check Tests. Public Schools Publishing Co., Bloomington, Ill.
   Monroe Diagnostic Reading Tests. Chicago, Stoelting.

Measuring Library Skills

Children in upper grades of elementary school are capable of achieving considerable skill in the use of supplementary materials and reading aids. Examination of the range of materials used and the facility with which children use the library skills indicates that some of the simpler techniques need development. These include the effective use of library privileges, the securing and use of a library card, the location and use of reference materials.

Measuring Literature

Evaluation techniques and tests in appreciation in the past have emphasized very largely literary knowledge gathered including such items as kinds of writings, moods expressed, styles, patterns, structural elements, workmanship, interpretations, and identification of characters, events, and scenes. More recent methods of appraisal are recognizing the effects of literature on the reader and the behavior or reactions of the reader. Some questions used are:

What does he read?
How much does he read?
On what level does he read?
How does he select his reading?

Other techniques inquire further into the reactions of the reader -- the satisfaction derived, enjoyment evidenced, desire for more of the same, curiosity about other similar or related materials and an urge to express ideas creatively. It would seem advisable for purposes of guidance that frequent discussions and observations of leisure reading would provide significant leads for the promotion of greater appreciation.

Measuring Interests

Basic to stimulating greater appreciation for better literature and wider range of reading is a careful consideration of present reading interests and opportunities for reading at home and at school. Such investigation often reveals a range of interests limited to only one kind of reading -- fiction, travel, comics or to a very small amount of leisure-time reading. On the other hand, expressed interests may be extremely immature or even undesirable. Studying pupil's present interests through careful inventories[1] and discussions not only reveals limitations but also suggests the starting point for developing wider and better interests.

Measuring Attitudes

Attitudes toward reading are frequently of long-standing and account for present reading interests, activities and difficulties. Building a favorable attitude toward reading through a continuous program of satisfying experiences is a major responsibility of every teacher from kindergarten through college. A feeling of failure, criticism, overstress on techniques or mechanics without readiness, unfavorable pupil comparisons and the like have contributed largely to undesirable attitudes toward reading and unwillingness to read anything or to read in specific fields. Adverse attitudes toward reading must be corrected

1. Paul Witty and David Kopel, Reading and the Educative Process. Boston, Ginn, 1939, pp. 316-325.

before growth in any phase can be expected.

Summary

For consistent growth in all phases of the reading process, a carefully planned, continuous program of evaluation should be organized. Such a program is dependent on well defined reading objectives, pertinent data from carefully selected standardized tests for group appraisal, accurate information concerning needs of individual pupils, recommended techniques for correction of reading difficulties, and provision for re-evaluation and modification of all procedures.

Continuous awareness of needs of each individual pupil and a well planned developmental program for his instruction are the responsibilities of teachers in all fields at all levels. A careful analysis of the results of an evaluation program should be not only in terms of the instructional phases but in terms of the group, and the individual and the total development.

Bibliography

Bond, Guy L. and Bond, Eva. Developmental Reading in High School. Macmillan Co., 1941.

Caswell, Hollis L. Education in the Elementary School. American Book Co., 1942.

Durrell, Donald D. Improvement of Basic Reading Abilities. World Book Co., 1940.

Gray, William S., Chairman, Gates, Arthur I., and Tyler, Ralph W. Reading in General Education - An Exploratory Study. American Council on Education, Washington, 1940.

Greene, Harry A.; Jorgensen, Albert N., and Berberich, J. Raymond. Measurement and Evaluation in the Elementary School. Longmans, Green and Co., 1942, pp. 329, 357, 363.

Harris, Albert J. How to Increase Reading Ability. Longmans, Green, and Co., 1941.

Lee, J. Murray, and Lee, Dorris May. The Child and His Curriculum. D. Appleton-Century Co., 1940.

McKee, Paul. Reading and Literature in the Elementary School. Houghton Mifflin Co., 1934.

Monroe, Marion and Backus, Bertie. Remedial Reading. Houghton, Mifflin Co., 1937.

Smith, Eugene R., Tyler, Ralph W., and the Evaluation Staff. Appraising and Recording Student Progress. Harper and Brothers, 1942.

Witty, Paul and Kopel, David. Reading and the Educative Process, Ginn and Co., 1939.

Wrightstone, Jacob Wayne. Appraisal of Newer Elementary School Practices. Bureau of Publications, Teachers College, Columbia University, N. Y., 1938.

PROBLEM CHILDREN OR PROBLEM COMMUNITIES?
MINORITY GROUPS

Miss Elis Tipton, Teacher, San Dimas

Dr. F. Ross Haviland, of the National Committee on Mental Hygiene, said recently, "Shared hardships, danger, privations unite a people, strengthen them. Activity and serving build up good mental hygiene." Among six causes of the breakdown of civilian morale, another eminent psychologist listed the following: misconceptions of events at home and abroad, fostered by rumor and poor judgment; feelings of being mistreated or discriminated against; mismanagement of aggressive and hostile feelings toward the enemy, by intolerant attitudes toward groups and individuals in the population.

If these statements are valid (and who will challenge them?) is it not reasonable to expect disunity and low morale among the children and youth of our minority groups? It is true that they are enduring the same hardships, danger, and privation which are our common lot. But are we sharing these experiences with them? In a physical sense, yes; in a spiritual sense, no; for true sharing can take place only between those who respect and understand one another. Misconceptions, leading to a complete misinterpretation of our purposes and plans, have been deliberately fostered by those who seek to divide us. Shortly after our entry into the war a story was going the rounds of some of our Mexican colonies that Mexican boys were being inducted into the service in such large numbers because it was the purpose of the army to use them in the front-line trenches as shields to protect the lives of our own American boys. Ridiculous, but the true explanation was of little comfort to the selectees and their parents, for the fact was that proportionately more Mexican boys were being drafted because youthful Anglo-American workers in defense plants were then being deferred; and Mexicans were, at that time, being almost universally rejected for jobs in such plants. This discrimination naturally bred violent resentment. In some cases, where employers made an effort to remedy the condition by opening up jobs to members of minority groups, much of the good accomplished was nullified by attitudes of workers, some of whom flatly refused to work with Mexicans or Negroes. Some plants still refuse employment purely on the basis of color or nationality.

That last paragraph sounds like ancient history, and it is; for it was written in the latter part of May before the most recent outbreak of violence in Southern California. What occurred in early June is not the first of these disturbances, as we well know, nor will it be the last, unless we make use of all the knowledge and good-will we can muster, first to understand all the causes of such uprisings and then to prevent their recurrence.

The following sequence of typical headlines chosen from various newspapers during the month of June and the early part of July may be suggestive of the problem as a whole -- of some of the causes of the violence and of possible action which may point toward a solution of the problem:

Axis Agents Spur L. A. Gang Warfare
Zoot Suit Gangs Gird for War with Navy
Sailors Banned from City by Navy Orders
Policeman Is Ambused, Run Over by Zoot Auto
Dope Users Linked to Gan Warfare
Soldiers Warned Not to Mix in Zoot-suiter Rioting

Pachuco Girls Slash, Beat Young Woman as Zoot-suit Rioting Feared Resuming
Zoot-suit Rioters Spread into Outlying Cities as New Incidents Reported
Atty. Gen. Kenny Takes a Hand in L.A. Zoot-suit Warfare
Warren Plans Steps in Huge California Problem
Committee Will Work to Prevent Zoot Outbreaks
Zoot Battles Subsiding Says Horral
Action on Youth Crime Demanded
Zoot-suiters Promise to Be Good
Seek Rioting Cause, Cure
Liquor, Gangster Movies Blamed for Delinquency
Prestige Desire Held Cause of Delinquency
Public Parsimony Blamed for Zoot-suit Outbreaks
Zoot Rioting B lamed on Lax Police Action
Mrs. Abasta's Son Was a Zoot-suiter Too (Frank A. cited for extraordinary gallantry. Sailor)
Zoot Rioting Facts Studied
Power Bloc Formed in County to Fight Racial Discrimination
Zoot Probers Veer off onto Lawyers Guild
McWilliams Lists Causes of Zoot Suit Outbreaks
Grand Jurors Told of Gang Cures
Judge Scott Urges Churches to Join Fully in Handling of Youth Problems
Youth Admits Attack Hoax (Fearing punishment when he's late, boy makes up story of beating by zoot-suiters) - Upland
Religion is Foundation of Democracy, Minister says; Intolerance Is Regretted

Following is a recent newspaper article, heading and all:

Zoot Suit Riot Committee Meets

Gov. Earl Warren yesterday met with his committee of six, appointed to investigate recent zoot suit riots, and declared:

"It is the duty of the state to remove the causes of race riots and to protect the lives and property of the people, regardless of their creed or color.

"If all join in the effort to stamp out such causes, there is no reason why such occurrences should ever again be visited on this state.

"I can think of no greater service to render the Axis than to permit conditions to arise which may develop into disorders of that character."

Atty. Gen. Robert Kenny, who attended the session, declared that steps were being taken in California to guarantee that "disorders such as occurred in Detroit will not happen here."

Members of the committee were Auxiliary Bishop Joseph T. McGucken, Dr. Willsie Martin, Walter A. Gordon, Negro attorney; film actor Leo Carrillo, and Karl Holden, director of the state youth auxiliary, and Kenny.

In most instances it is color rather than nationality, as shown by an incident which occurred in a citrus packing house a few miles away. A fair-skinned, attractive woman applied for a job. She was told that she could go to work at once, that the plant was desperately in need of packers, and that it would be appreciated if she would bring any other workers from her town. She replied that she had four more girls outside in the car, who were anxious to work. When they came in, the manager, seeing that they were dark-skinned, froze up and said bluntly, "We can't hire these girls. We simply do not hire

Mexicans." The woman's reply was, "I'm the only Mexican in the lot. Every one of these girls is an American citizen - American born. I alone was born in Mexico." (In all fairness it should be said, however, that many war plants have recently made every possible attempt to secure fair treatment for all their workers.)

Such was certainly not the case a year ago. Last summer Mr. Guy Nunn of the War Manpower Commission stated that there had been more discrimination against Mexicans than against any other industrial group in the United States, not excepting the Negroes in the South. Being frustrated in their efforts to gain desirable employment, being forced into the army without an understanding of events either at home or abroad, being subjected constantly to Axis propaganda, and being (at least according to their own interpretation mistreated and discriminated against, they naturally found undesirable outlets for their energies and emotions. Is it merely a coincidence that one year ago the newspapers of southern California were full of accounts of the misdeeds of youth of Mexican descent, whereas today, although we read occasionally of infractions of law by members of that group, the open rebellion and the violent outbreaks have subsided? Certainly one very potent reason for the improved condition is the fact that scores of the young people who were involved in the disturbances have been absorbed into industry and into the armed forces. Many more who were in no way involved in any phase of delinquency have had their morale immeasurably improved by acquiring status in the community through participation in the war effort during the past year. At last something is being done.

The general problem willremain to challenge us for a long while, however, especially teachers, for there is a large group of children of school age who have not been given sufficient constructive outlets for their energies. Moreover, many of the conditions which have bred the gang spirit, conditions forced upon them as members of a minority group, still exist and will continue to exist for many years. Even elementary school children have resorted to delinquent behavior in an attempt to escape being ignored, slighted, and restricted. In the unwholesome environment in which they live prestige can be gained by getting adverse publicity in the newspapers. Gangs and gang members were found to be vying with one another to see who could get the longest articles about their misdeeds and the most pictures of themselves, in the papers. If they could not gain recognition and acceptance by being good, they could, by being very, very bad, at least compel people to notice them. This pattern of behavior is readily recognized and its causes well understood by teachers. Neither it nor the many other kinds of abnormal actions of children of minority groups are restricted to children of those groups. When the elimination of delinquency among children brought up under far more favorable environments has proved impossible we should not be too discouraged in our efforts to eliminate it among these less favored ones. Handicapped by a physical environment which includes poor housing, overcrowding, inadequate diet, poor and insufficient clothing, and lack of medical care; and by a mental environment which affords little self-respect or self-satisfaction and very little hope for the future, they could not respond eagerly to our first attempts even if they trusted us more fully. It is certain that we can expect to do little for the so-called problem child of a minority group as long as his community, by denying him and his family status and participation in the life of that community, frustrates his efforts to achieve a good life. Thus, as long as there are submerged minorities in

our social structure, the schools must face the task of rehabilitating not only the usual number of problem children, created by the exigencies of modern living, but also a large number of children who have become delinquent solely because they do not have majority status.

While this task of rehabilitating delinquents and the much more important one of preventing delinquency are, primarily, social problems for the whole community, they can best be attacked through the school. Our school problems can never be solved unless the community problems are solved, yet the school is the best instrumentality through which the problems of the community can be approached. The task is largely one of educating or re-educating the members of both the majority and the minority groups for citizenship in a democracy.

Present world conditions and the future of world peace make it necessary that some of the opinions and some of the attitudes of the community, and initially of educators themselves, be re-examined and re-evaluated in light of the fundamentals of democracy. When we remember that Hitler owes his power largely to a small minority of frustrated youth, the problem children of post-war Germany, who became the spies, the overseers over forced laborers, and the members of the Gestapo used by Hitler to oppress the free peoples of most of a continent, we cannot look with complacency upon conditions which breed discontent and outbursts of violence.

We teachers must determine the root causes of the wave of gangsterism in the Southwest and of the deep and growing resentment among the Negroes all over the United States. We must make more effort to understand the background, the living conditions, the way of thinking of these young people. We must help the community to see to it that when the war is over they are given jobs and decent living conditions. Many of the members of minority groups who are now in favorable positions economically are quite cynical about the future. They say, "We know we are getting work now and we are getting good pay, but it is only because we are so badly needed. Just wait till they begin laying people off. We know we'll be the first to be fired. And now that our boys are needed in the army we are jolly good fellows, but just wait and see how we get treated after the fighting is over."

These attitudes and their causes emphasize our responsibility to the teaching profession and our personal moral obligation not only to re-examine the basic concepts of our democracy but to help to put them into practice. Dr. Kilpatrick has said, "We learn what we live. We live what we learn. We learn it only to the degree that we live it. We live it only to the degree that we learn it." Unless the American people can more readily translate into action the great words which express the American ideals, is there not danger that democracy will be written off as a failure even if victory is ours on the battle field?

Do we teachers not need to do a lot of soul-searching regarding our own attitudes and actions? Can we expect children to respect the rights of members of minority groups when many teachers do not respect them? Can we expect members of the community to approach with reason and not with prejudice, the problems arising out of differences in race, color, creed, and nationality when many educators consider those problems purely on an emotional basis? Many of us cannot free ourselves from the notion of the superiority of the white race and the inferiority of the others. Many teachers act

as though they believed that all Negroes are dirty, lazy, irresponsible, and dishonest; that they are biologically inferior to all white men. Many entertain similar stereotyped notions about Mexicans, Jews, and other members of submerged groups. Perhaps we could take a lesson from a Mexican boy who wrote, "I like some Americans because they are fair and friendly to me. I don't expect all of them to be good. There have to be good and bad people everywhere." A similar thought was expressed by an Anglo-American boy who siad, "I like the Mexicans very much; there isn't anything I don't like about them unless it is just something I don't like about a particular individual."

Some teachers who would not brand a whole people for the misdeeds or the failures of individual members of the group are, nevertheless, often too timid to stand out against narrow community prejudices. And who can blame them? One teacher here and there can do little, but once it is understood that all teachers are standing together to insist upon respect for the personality of each and every child in our schools we shall not be afraid to speak out. When people generally are convinced that our treatment of minority groups is in violation of the basic ideals of both the Christian religion and the democratic way of life, we shall then have some hope of becoming Christian and democratic. Glenn Frank once said, "Democracy cannot survive apart from a spiritualized religion that preserves in a man a sense of the sanctity of the human spirit." How can the sanctity of the human spirit be preserved in a youth who, from infancy, has had to face discrimination in the schools through segregation; discrimination in the industrial world by being forced, regardless of his ability, to do menial labor for inadequate pay; and discrimination in the community by being forced to ride in Jim Crow cars, by being restricted from using public swimming pools, theaters, and other public buildings, and by being compelled to live in Jim towns and colonies?

Channing Tobias has put it thus:

If you discriminate against me because I am dirty,
I can make myself clean.
If you discriminate against me because I am bad,
I can reform and be good.
If you discriminate against me because I am ignorant,
I can learn.
If you discriminate against me because I am ill-mannered,
I can improve my manners.
<u>But</u> if you discriminate against me because of my color,
You discriminate against me because of something which
God himself gave me and over which I have no control.

What does it do to a child of Mexican background who goes to the swimming pool with his older brother and sister and sees them admitted because they are fair-skinned, whereas he is refused admittance because his skin is darker? What does it do to the Mexican youth who is told in stentorian tones so that all will be sure to hear, "We're letting you go into the pool today because your teacher came and made arrangements before hand. But don't get the idea that you can swim here just any time. Mexicans are allowed only on Fridays." He might have added, "We change the water and scrub the pool on Friday night." What does it do to a Negro youth who has been brought up in the North and sent to military camps in the South

where he is subjected to Jim Crow discriminations in every phase of life? What would your feelings be if you were refused admittance to a government defense training class because you were an American of Mexican ancestry and were shortly afterward inducted into the armed forces to fight for your country? What does being looked down upon and despised do to all those who are so treated? We teachers know the answers to these questions. Why are we doing to little to prevent such incidents? Perhaps we should first inquire why such incidents occur so frequently.

It is not that American people are, by design, cruel or mean or unfair. They merely act upon prejudices which are the result of long-established emotional patterns, prejudices which will not change until the schools and the churches change them. A Mexican boy, in describing an experience in which his family was forced to move back into the colony after having tried to live on a so-called decent street said, "We didn't like the idea of being chased out of that certain neighborhood just because we are darker and because we speak a different language, but I don't have anything against anybody. I think very few Americans are <u>really</u> like that. I believe they just don't take time to think or just don't care to bother." If we don't learn to take time to think and if we don't learn to care to bother we shall have a much harder time in winning the war, and we shall utterly fail in the responsibility which will be ours when victory comes. Especially if color is to remain "the unfinished business of democracy" it will rise up more and more frequently to bedevil us abroad as well as among our minority groups at home.

The very words " minority group" have, of late, taken on an unpleasant connotation. Some people utter them with a bit of condescension. Now, just what is a minority group? We readily concede that the Negro, the Mexican, the Oriental, and the Jew are members of minority groups in the United S tates. But now that we can no longer afford to think in narrow, nationalistic terms; now that our ideas as well as our wars must of necessity be global, let us consider some other minorities. The white race is a world minority group. A t present it usurps majority status because it has built up the power and the prestige to do so. That power and that prestige are today being seriously challenged. Believers in the Christian religion are also a world minority. Perhaps the adherents of democracy are, or may become a minority, for no one can now be sure just what is the line of demarcation between democratic and non-democratic. White supremacy, the Christian religion, the democratic form of government world minority groups! Surely it behooves us to speak softly of minorities, and to wield the big sticks of power and privilege with more discretion.

And what have been the effects of our prejudices, of our easy assumptions of superiority? In the first place, our attitudes have been, as I have already suggested, the root cause of most of the negative attitudes of the children of our submerged minorities. Whereas, twenty years ago our adolescents of Mexican parentage were the most docile of their age group, the actions of many of these young people today are rebellious if not violent. Even very young children go about with a chip on the shoulder, daring all comers to knock it off. A cts of discrimination which were formerly borne stoically if not good-naturedly now arouse quick resentment. Constant frustrations and injustices have bred the desire to smash, to burn, to kick down the door. Many, who are too well balanced to go to violent

extremes in their efforts to escape from a situation which has become increasingly intolerable, suffer from a smoldering discontent or retreat into feelings of fear, insecurity, and inferiority. All these negative attitudes and reactions must necessarily affect the learning ability of the children who suffer from them. No mind, if it is inflamed by resentment or by a sense of injury, can be receptive to American history and civics, to the beauties of English literature, nor, indeed, fully receptive to any subject matter. Even an eagerness on the part of some of the more studious pupils to know about our institutions and our principles is negative. When asked why he had chosen a civics text to read during the free-reading period a Mexican boy replied, " I'm trying to find out what I've got coming. I'm an American citizen and according to this book I'm not getting nearly all my rights."

When words become meaningful only because they indicate broken promises, promises of rights which are daily denied in action, those words become dangerous. Many children as well as adults throughout the country are becoming increasingly conscious of the disparity between word and deed. When they read in the Declaration of Independence that all men are created equal they know that equality of opportunity is implied, but that it is not realized by them. They can understand the Bill of Rights. They know that their rights are often trampeled under foot. They read in the fourteenth amendment that they are entitled to the equal protection of the law, but they know that equal protection is too often not afforded them. I know an instance last summer of a Mexican boy's having been kept in jail eight days for no other reason that that he had been rounded up with other wearers of zoot suits. Even those who cannot read intelligently enough to interpret the meaning of the promises feel, nevertheless, that they are constantly being denied rights and cheated of privileges. This feeling has doubtless had much to do with producing the erratic actions of the gangs which operate in Southern California. These young people have heard much about their rights, but they have not learned that rights and privileges imply duties and responsibilities.

Many people consider Mexicans as inherently irresponsible. Such is not the case. Their lack of responsibility is due to lack of training in being responsible. Some say that Mexicans are naturally a depraved lot, and they point to the gang warfare to prove the point. So much newspaper publicity was given the three per cent of our Mexican and Mexican-American population who ran afoul of the law that we often forget the ninety-seven per cent who are respectable, law-abiding citizens. Thus, much prejudice has grown up or has been intensified in the minds of many people, and an entirely erroneous impression of the youth of Mexican descent has been created because of the few gangsters, the few girls with knives in their boot-tops, and the wearers of zoot suits.

Without doubt zoot suits are ridiculous, but so are many of the practices of our own young people of white, Anglo-Saxon background. Z oot suits, in themselves, need not be taken too seriously. Do you remember the vogue some years ago among our high school boys, of wearing pastel colored corduroys? The president of the University of California was once forced to appeal to the upper class boys to have their trousers washed because the custom of gaining prestige by wearing the dirtiest pair of pants on the campus had become a menace and a disgrace. Some may recall the day when

college students vied with one another to see who could sit longest atop a flag pole or who could swallow the most goldfish. S hall we assume that all these young people were depraved by nature, or shall we seek the real cause of such erratic actions? When youth are surrounded by adults who are living a trivial, inconsequential life, and when they themselves have nothing to challenge the best of their thinking and the best of their energies, we should not be disappointed if they follow the trend of their times. If Negroes, Mexicans and other youth who have not been helped sufficiently to acquire a real purpose for living are out of step with a nation at war, need we be too critical of them? It is not their silly manner of dressing that is important. It is the fact that the zoot suit has become the symbol of protest of a number of submerged minorities. As soon as these youth acquire a feeling of belonging to the serious life of the community they will no longer feel the need to be different from the other members of the community.

Instead of the bitter criticism one often hears of these young people, and of the jeers flung in their faces why do we not make an earnest attempt to understand them? How little we know about the turmoil in the mind of a child of a minority group, about the conflict of cultural patterns which he must face. A child from an Italian, a Mexican, or a Jewish home must often live a sort of double existence with two different action patterns which conflict with each other at crucial points. He becomes one personality at home and another quite different one abroad, and it is small wonder that disintegration often results. His only other alternative is to revolt against either his home or against society, for if he remains true to the mores of his parents he is often unacceptable to the people of the community, and if he adopts the manners and customs of the community he is apt to become unacceptable to his parents. They lose his respect because of their old-country ways, and because he soon learns to take advantage of their ignorance of our language and customs. He is thus suspended between two conflicting cultures with a foothold in neither. His growing disrespect for his parents removes most of the controls of family life. Furthermore, his contacts with American life have been largely with the demoralizing influences such as living in slum sections of cities or in rural ghettos, attending cheap and vicious movies, frequenting commercialized dance halls, pool rooms, and other vice-breeding establishments found in such numbers in the delinquency areas. Frederick M. Thrasher, author of <u>The Gang</u>, has said, "The children of the foreign-born....when they escape parental control and follow their own impulses, become Americanized only with reference to our vices."

In the lives of so many of them the forces of disintegration so consistently overbalance the forces of integration that, even when parents retain some degree of control, it is almost impossible for the children to act like normal individuals. Some of the best of them, those who are endowed with more ability and who have had greater opportunities than the average, find it possible to overcome certain undesirable emotional reactions, which are very detrimental to character, only after a long period of emotional conflict and re-education. By this I do not mean the normal emotional conflicts which are our common lot, but deep emotional disturbances which result from wounds of the spirit which are inflicted on members of other groups because of racial or color differences. Those who, in spite of a bad environment and of lack of acceptance, are able to achieve a well-balanced personality are made of sterner stuff than the average human being. But what of the average

and the less than average? We can no more afford to forget these among our minority groups than among our population at large. It is the average child and especially the below-average who are most completely at the mercy of the vicious environment and the unfair treatment which cause most of our juvenile delinquency.

Who is responsible for the environment and for the treatment accorded these children? Teachers in American schools, past and present, are partly responsible for not having taught citizenship so effectively that such conditions would not be tolerated in any community. The churches are partly to blame. They, above all other organizations, are called on to preach and to practice justice for all men. Yet many of our most pious church members entertain violent prejudices. Civic leaders are responsible, for they control the means for improving the environment of all the people. Indeed, every member of the community is partially responsible, and in the end every member of the community will have to pay his share of the penalty for having shirked his fair share of the moral obligation.

Those who are not blindly prejudiced can readily see the damage done to the children of minority groups by the treatment they have received in many of our communities. Few seem to realize, however, that the injuries done to the children of our own heritage may, in the end, be even more costly. When an eighth grade boy from down Arkansas way writes, "The Mexicans haven't got the brains to be nuthin but orgin peckers (orange pickers)," our sympathies should go out, not to the Mexicans, but to the boy and to his parents and to other members of the community who are like-minded. It is a rather terrible inditement of our vaunted way of life that the only claim to superiority of many a Southern share-cropper is, "Well, thank God I ain't no nigger." His color prejudice renders him blind to the fact that he and his colored neighbor are members of the same economic minority and that one cannot rise without the help of the other. His children are unable to acquire any valid set of moral values, for only external things count. It is not just ignorant share-croppers who hold prejudices, however. The orange grower who says to his son, "I want you to keep away from those Mexicans. They are all right in their place but they are a lower class of people just like the Negroes, and the less you have to do with them, the better." What chance has that lad to see himself according to his own real worth or to learn to judge others according to merit? No wonder he becomes smug, boastful, and self-satisfied. The greatest pity is that it is not a natural weakness, for little children are singularly free from race and color prejudices until their minds have been conditioned by the attitudes and actions of their elders.

Damaging as they are to character, the airs of superiority, of smugness, and of braggadocio are not our chief cause for concern. A slight over-inflation of the ego may do no permanent harm to an individual, but no person can retain his integrity of character and of mind if his deeds do not square with his words. An uncritical acceptance, over a long period of time, of the verbiage of democracy with little attempt to translate the words into action seems to me to be the chief cause of so much of the confusion in modern American thinking. One wonders just how much of the obscurantism that daily impedes the war effort and makes the chances of securing a just peace very problematical is due to our habit of uttering pious platitudes one moment and then acting in a manner that contradicts them the next. Would it not be better, if we really believe in a "Master Race," to change our

words to accord with that theory? At least our actions would then become more dynamic than at present, through singleness of purpose. On the other hand, if we really believe in the words we teach can we not find some means of making them live in the actions of the people? Do we dare longer to allow children to think merely in clichés? To mouth beautiful sentiments about equality while they treat with contempt their fellow citizens of Jewish, Negro, Mexican, or other national origin? To repeat the pledge of allegiance to the flag every morning when "liberty and justice for all" means to many of them, in action, liberty and justice for all white Americans of Anglo-Saxon ancestry? To sing, "America, America, God shed his grace on thee, and crown thy good with brotherhood from sea to shining sea," when some reflect such parental attitudes as, "Why didn't they stay where they come from? But if they do come here make 'em stay together in the colony and have 'em do the hard labor like pickin' fruit and workin' on the railroad"? Concerning community attitudes, a Mexican girl wrote, "I have to be always very careful about what I say and do where I live because I have heard Americans say that I can be kicked out of that neighborhood. I hear them say that we should live in the colony because that is where all Mexicans belong. One of the girls told another that she couldn't see how people could stand us living beside them. I just have to swallow the things the kids say about the nationality of my parents." Surely if we ever lose our democracy it will not be because an enemy has destroyed it from without, but because we have so weighted it down with meaningless words that it lacks the motive power to get into action. Great ideas, carried over into action, have built our nation, and it is going to be necessary to carry over into action even greater ideas if we are to help to build a free new world.

Teachers who have a sense of the high calling of their profession intend to help to build that free new world. In schools throughout most of America groups of children of mixed races or of mixed cultural heritage are learning to live together harmoniously, to understand one another as the sons and daughters of the people who have made America, each learning to appreciate the contributions rendered by all the others to our total civilization. C onstructive attitudes are being built up slowly and painstakingly. That is well, for slow progress is better than achieving flash in the pan results only to have them wiped out in after-war reactions. There are no short-cuts, no easy methods. There will be set-backs. W e must learn to look for encouragement in the most unlikely places. I believe that much of the violence which has occurred among youth of minority groups recently is due primarily to the resentment aroused by our having done an excellent job of educating these young people regarding the rights and privileges afforded by a democracy. Our failures have been two-fold. We have turned children of minorities out into a community which denies them most of the privileges and many of the rights of American citizenship, without adequate preparation to meet the situation, and we have failed to educate the majority group to accept them as American citizens who are entitled to all the rights and privileges of an American citizen.

Teachers must, however, take the long-range view and should encourage their pupils who belong to submerged minorities to do likewise. More damage is done by arousing false hopes, inevitably followed by disillusionment, than by merely drifting along as usual. We need to be utterly realistic about community attitudes. We must be frank with these young people. We must tell them that they will have to be not only good but excellent if

they are to succeed, and then we should help them to set up and to live by their own standards of excellence. They cannot maintain high standards, however, if their efforts to succeed leave them with a constant feeling of frustration. It is our duty to help them to find compensatory outlets for this feeling. We must help them to develop the patience necessary to an understanding both of their own group and of the majority group. Through an understanding and evaluation of their own prejudices, they must learn to forgive the prejudices of others. Members of minorities must be more willing than they have been in the past to assume a larger share of community responsibility. Their unwillingness has been due largely to a feeling of their own inadequacy or to the fear that they are not wanted. If teachers will make a special effort to afford the children of these groups many opportunities for learning to be responsible, and will encourage and help them to prevent their failing in the tasks they assume, in time we shall see that the irresponsibility of which we so often complain is not a peculiarity of certain peoples but is merely a condition brought about by lack of education and opportunity.

Children of foreign parentage must learn to conform more willingly to those American customs and practices which are essential to the welfare of the nation. One problem which we teachers need to face with all our older pupils is the question of what are the essential points of conformity and on what points may diversity of thought and action be desirable. Since much of the friction between groups in a community is due to differences in nationality of origin, in language, in customs, and in religion we should try to find a common denominator for the essentials. So accustomed have we become to judging men, not on the basis of character, abilities, and accomplishments, but upon their wealth, their social position, and their external characteristics that we have all but lost that sense of moral values which tells us what is essential. An honest attempt on the part of large numbers of our young people to find such a common denominator could lead to a sorely needed revival of interest in moral values and in the principles on which this nation was founded.

In our attempt to find points of conformity we should be very careful, however, to preserve those differences which lend color and charm and variety to American life. From the great variety of cultural values which have been part of our unique heritage we must develop an appreciation for the best of all those values. Our land has been made both great and interesting by people from all parts of the globe, and the cultural gifts which these people have brought with them are gradually being integrated into a true cultural democracy. One of our greatest privileges as teachers today is to be able to help to bring that integration about harmoniously.

If we teachers are to make the most of that privilege, and if we are thereby to help to prevent juvenile delinquency among children of minority groups, how shall we proceed? Our first step is to achieve for ourselves a broad point of view socially and a deep understanding of the human factors involved. Until we really know these young people and know how they live and feel, there is little use in talking about specific teaching devices or methods. I shall mention, however, certain procedures which may help teachers to understand pupils of minorities better and which may help to develop better relationships within the school. Some of these ideas grew

out of my work with a Mexican young peoples' discussion group, organized in San Dimas three years ago for the purpose of assisting the Mexican children in making a more satisfactory adjustment to the school. Some of them came from efforts in the school and in the community to improve the relationships between people of Mexican and of Anglo-Saxon backgrounds, especially from the work of intercultural clubs, on both child and adult levels. It is our purpose to use these procedures in the San Dimas experiment which is being conducted this summer under the Claremont Colleges Workshop program, with funds supplied by the Office of the Coordinator of Inter-American Affairs.

First, try to secure status for the children of the minority group or groups by attempting to break down ideas of racial superiority entertained by children of the dominant group. Teach the simple facts of anthropology regarding race and culture. Expose the fallacy of a "Master Race" and the foolishness of the Aryan myth and others of the same kind. Fight against general segregation because it breeds hostility and because Americanization can best be accomplished by mingling with Americans. Teach that people should be judged on their own merits as individuals and not as members of a group. Teach older children the destructive effects of discrimination and injustice upon the personality of those involved. If local prejudices are strong, first secure sympathetic reactions toward other minority groups who live at a safe distance; then gradually approach the home problem.

Create an appreciation of other cultures by teaching about the countries and the ways in which our own culture has been enriched by contributions from them. Have the children search for customs and folk-ways of other people that are worthy of our emulation. Through parties, folk dances, mutual celebration of the holidays of both the United States and the country of origin of the minority, through music, and through many other activities encourage an exchange of cultural values. Teach children that they will be world citizens; that the best laboratory for learning how to be good world citizens is the school which has one or more minority groups. Suggest the idea that it is a real privilege to be able to learn from one another.

Build up the self-esteem of the children of the minority group. Develop respect for their parents by creating a general interest in the country from which they came. Help the older children to understand and to sympathize with their parents. By counselling and guidance help them to overcome their negative attitudes and to resolve their home and community conflicts. Help them to understand American customs better and to give up those customs of their parents which tend to divide us as a nation. Educate them to assume responsibility. Create occasions which will give constructive outlets to their energies. Make a special effort to help children who come from non-English speaking homes to understand more clearly what they read. Try to help them to overcome the handicap of a meager background of experience by providing actual and vicarious experiences which will be challenging and meaningful to them. Use more care in selecting books for children of foreign background. The content of books within the range of their reading ability is often entirely too juvenile. Help them to understand the figures of speech with which so much of our literature abounds. I found recently only one Mexican child out of eight who had any conception whatever of the meaning of a dozen of our most commonly used proverbs. Help them to get the point of our jokes. In a series of reading tests consisting of stories, jokes, arithmetic problems, and

paragraphs on science and history all Mexican children in the class tested except those living in American neighborhoods rated far lower in the jokes than in any other test. A typical score was that of a boy who rated 11.2 in grade placement in stories and 5.9 in jokes. Perhaps one cause of the super-sensitiveness of our Mexican children is their difficulty in getting the point of our jokes.

For teachers who do not speak Spanish, and unfortunately that includes most of us, a very fruitful means of gaining an understanding of Mexican children is to work with a group of social minded young people who have come up through our schools. If an occasional college student who has studied psychology and sociology can be included in the group a much deeper understanding is possible, for they are able to make articulate the feelings which others have, but cannot express so clearly. These young people can interpret the problems of the children much better than the parents can, for the parents have largely the old-country point of view, whereas the young people can see the whole problem. They have, themselves, experienced the conflicts between parent and school, between the customs of the home and the customs of the community. They are able to interpret to the teacher the causes for the confusion of mind and the division of loyalties found in so many of the children.

And now comes the hardest undertaking of all, that of adult education. We must use every possible means of influencing the community toward a deeper understanding, for it does little good patiently to build up constructive attitudes in our school children if adults can break down those attitudes with a few derogatory remarks. Plays and festivals are effective. Lecture and moving pictures for adult classes, and forums help. Discussion groups and intercultural organizations have proved productive of good results. Church programs, if well planned and executed, are one of the most hopeful means of attacking discrimination. It is most desirable to secure the cooperation of service clubs, Parent Teacher Associations, women's clubs, and other civic-minded organizations. Even if every constructive source of influence in the community is utilized this undertaking will be long and difficult. To succeed, such an enterprise must unite all groups and must be a challenge to every individual within the community. Not until the people of a community rally wholeheartedly to the support of those who lead in such an undertaking can any permanent good be done.

Who is to take the lead? Since the work is, as I have already suggested, largely of an educational nature, the school seems the most logical organization through which to coordinate community efforts. No other organization is so free from partisanship and denominational bias; no other so completely represents all the people. And what is to be the part of teachers in such an enterprise? New duties? No, for our main duty has always been to educate the people for citizenship in a democracy. It is our responsibility now, and always has been, to see that our teachings get over into action in the community; otherwise there would be no point in teaching. What is required of us is a new dedication to duty. We simply must get better results. No wonder our principles are being challenged when they have been so long preached in our churches on Sundays and denied in practice throughout the rest of the week; taught in our schools during the formative years of life, but never really learned because never really

lived. When community life expresses more fully in action the principles of equality of opportunity and of Christian brotherhood, we shall have fewer problem children from majority group and from minority group alike. When better relationships among all peoples within our borders have been attained we may actually become "one nation indivisible, with liberty and justice for all."

PSYCHIATRIC FACTORS INFLUENCING LEARNING

George N. Thompson, M. D., Chief Psychiatrist, Los Angeles County General Hospital, Instructor in Neurology and Psychiatry, School of Medicine, University of Southern California

In this discussion of psychiatric factors concerning learning or educability, I would like to present a concept that I believe true but which is not a part of general belief held in educational circles or even among some medical groups. This concept is that psychiatry is an all-embracing medical science which includes psychology in all its phases as one of its basic sciences, just as embryology is a science basic to anatomy and chemistry is a science basic to pharmacology and physiology. This immediately places us in the clear position of holding the concept that every factor which affects or controls learning or learning ability is a psychiatric factor. It would be as absurd to say that there are non-psychiatric factors affecting learning as it would be to say that there are non-psychiatric factors as causes of juvenile delinquency. The limitation of psychiatric factors to those resulting strictly from already existent mental disease progressed so far that it is detectable by anyone is a conclusion that was relinquished when psychiatry freed itself from the shackles of limitation which required it to say that a person was sane or insane. At that time there were established the true, fundamental, and essential axioms: 1. That there are all degrees of mental illness varying from the theoretically completely normal to the theoretically completely insane, with no definite borderline in between; and second, the axiom that there are almost as many different kinds of mental disease as there are of physical disease and that one may differ from another just as much as measles differs from a broken leg, with the treatment and prognosis equally different.

Modern psychiatry holds the general thesis that physiology and psychology are not separate but are one and the same thing as far as the central nervous system is concerned. One cannot have a thought without an accompanying series of neuronal reactions in the central nervous system; in fact a thought is a resultant of certain physiological neuronal reactions in the central nervous system. One cannot have a mind without a brain nor can one have a thought without a series of physiological processes to produce that thought. Psychopathology has taught us much concerning the abnormal physiological processes within the central nervous system that give rise to mental disease. It is through a study of these abnormal processes that we have learned most about normal psychology. It is only now that psychiatry is beginning to fully appreciate the pathophysiological processes inherent in the central nervous system that give rise to disordered ways of thinking, feeling and reacting.

Speculative psychology, otherwise known as philosophy, has long toyed with the problem of whether the chicken comes first or the egg. A similarly important speculative psychological philosophical problem has been which comes first--the thought or the underlying physiological process. Psychiatric studies of abnormal psychological processes leave little room for doubt that abnormal mental processes are resultants of abnormal physiological reactions giving rise to disturbed physiology in certain parts of the brain. Then is there such a thing as a normal, volitional thought? Probably not. The psychiatric evidence weighs heavily for the philosophical doctrine of determinism.[1,2,3.] We will

---

1, 2, 3. All references are to Bibliography, at end of this paper.

leave the attempt to prove the existence of free will to the speculative thinkers. We can only make deductions from observed phenomena.

The psychiatric factors conditioning or influencing learning may be divided into four general groups. These are:

1. Factors from the mind that is theoretically normal psychologically;
2. Abnormal factors from the theoretically normal mind;
3. Factors from the mind in the so-called latent or incipient mental illness stage, and
4. Factors from the mind with already developed mental illness.

The first group we will not discuss because of the easy availability of this data to most educators. In passing I would mention that it is probably the most important group of the four. The second group, comprising the abnormal factors from a theoretically normal mind which may influence the learning abilities of that mind, is very numerous. The first of these, because it is a term so commonly used, may be called nervous tension, or simply "nervousness." Nervousness itself is a term requiring further definition and one unacceptable to psychiatry without qualification. There is such a variation in meaning of the term "nervousness" in patients that to one person it may mean the uncontrollable shaking of his hand due to Parkinsonismus based upon hardening of the arteries of the brain, to such a differing factor as the inner tension based upon subconscious anxiety experienced by the patient suffering from anxiety neurosis. Nervousness or nervous tension is of course a symptom only and alone means little or nothing. As an isolated symptom it has essentially no more meaning than the symptom headache which may be due to such divergent causes as a brain tumor or an epileptic equivalent.

The next point of classification involves the age group of the students. The meaning of a psychiatric factor is considerably different depending upon whether it is a symptom expression from a child, an adolescent or an adult. In this discussion we are considering children and adolescents only. The same factors of course apply to adults but in different ways and with different meaning. Similarly the various periods of adult life must be treated differently in psychiatric symptomatology.

The importance of age group consideration is so great that I would dwell upon it further. Psychoneurosis and psychosis are practically non-existent in childhood. This concept is again at variance with the beliefs of many psychologists and educators; nevertheless clinic experience with vast numbers of children and adolescents bears this out. An example is cited to demonstrate the importance of this contention. A nine year old Mexican girl was brought to the hospital because of "neurotic vomiting." It was stated by the child's mother that whenever the child could not get what she wished she would vomit and complain of headaches. These symptoms had been in existence for approximately four months prior to the child's first visit to the hospital. The clinic admitting officers felt that nothing could be gained by admitting this child to the hospital, gave the child and her mother the benefit of some psychotherapy and sent them home. Two weeks later the child's mother returned with the patient complaining this time that the vomiting had become worse and that the headaches were more prolonged and severe. Furthermore the mother stated that when the child vomited the vomitus shot out about three feet from

the child's mc th. Again a diagnosis of psycho-neurosis, hysterical vomiting was made but this time at the insistence of the child's mother she was admitted to the hospital for examination by a physician. A neurological examination very quickly revealed choking of the optic discs to the extent of three diopters bilaterally and the rest of the neurological examination confirmed the presence of a neoplastic or expanding lesion in the right posterior fossa which was subsequently removed and found to be a cerebellar tumor of the astrocytoma variety. This "cured" the child's "neurotic vomiting." The point here is not the immediate failure to make a diagnosis; rather it is that the admitting officer was willing to make a diagnosis of a psychoneurosis in a nine year old child. Knowledge of the simple fact that psychoneuroses are practically non-existent in childhood would have avoided this error in diagnosis and led to more prompt treatment. Fortunately the insistence of a worried mother prevented catastrophe.

Our first general group for discussion comprising abnormal factors from the theoretically normal mind is composed of those cases theoretically organically sound and by definition those not having a so-called latent or incipient mental illness of the psychogenic variety but with psychological factors based upon the environment which are interfering with the educational process. It is generally believed that these psychological disturbances are based primarily upon emotional disturbances. We are less interested here in the cause of emotional disturbances than in their detection. Frequently the first symptom to come to the teacher's attention is the child's failure to make proper progress. In very young children this is frequently associated with habit disturbances as symptoms of primary behavior disorder.[4] Of these nail biting, thumb sucking, enuresis, masturbation, and tantrums are the most frequently seen. A case history revealing these symptoms should be investigated thoroughly for the emotional maladjustment producing them. In older children the symptomatic disturbance is usually a conduct disturbance. Once again associated with failure to learn properly may be noted truancy, quarrelsomeness, disobedience, untruthfulness, stealing, forgery, setting fires, destructiveness, use of alcohol, use of drugs, cruelty, sex offenses, or vagrancy.

A third group comprises the so-called "neurotic traits." It is here that the frequent misunderstanding and confusion with a true psychoneurosis exists. Again it should be emphasized that the true psychoneurosis in a child is extremely unusual. So-called neurotic traits are such things as tics, habit spasms, somnambulism, stammering, overactivity, and fears. Here we are on dangerous ground. Since the expansion of our knowledge of the various encephalitides more of the so-called neurotic traits have been found to be simply symptoms of localized encephalitis.

Once the emotional disorder has been recognized what can be done about it? As Dr. Bernard says,[5] "The already overburdened teacher, apparently expected to be a jack of all trades and expert in each, may properly demur at the suggestion that she investigate and diagnose all possible emotional difficulties in her pupils." Most communities now have special diagnostic assistance with child guidance facilities and other clinical services. Social workers, psychologists, and pediatricians add to the general fund of knowledge used by psychiatrists in handling these clinical problems. Limitation of these services, however, makes it necessary for the teacher to evaluate all cases so that the milder ones may be handled by herself through the application of

mental hygiene principles. Of these she will find simple reassurance to be most valuable. This must be applied as best fits each individual case. Encouragement of the child to participate in group activity, simple questioning of the anxious or frightened child in private, giving a special but carefully supervised and graded responsibility, are some of the methods that have been found of value.

Stepping on to the more solid ground of clinical psychiatry we come to the factors from the mind in the so-called latent or incipient mental illness stage. Is there such a thing as latent or incipient mental illness? Probably much less so than is generally believed. Isn't one either mentally ill or not mentally ill? Or do the germs of psychosis lie hidden in the mind waiting for their opportunity to multiply in culture when the medium becomes ripe as does the pneumococcus latent in the respiratory tracts of most of us. In the psychosis due to convulsive disorders the possibility is present. A twelve year old child began to manifest traits of abnormal cruelty. He was punished by his school principal for having fished out of the pond several goldfish and cut off their heads. Later he was caught beating a small puppy. His next act consisted in the slashing of the back of an adolescent girl with a razor blade. A diagnosis of probable cerebral dysrhythmia was made and confirmed by electroencephalogram. About a year later the boy had his first convulsion. Similarly psychoses due to disturbances of metabolism, growth, nutrition, or endocrine function may have a period of latency in a child during which period symptoms may develop one of which may be an interference with educability.

Psychoses due to new growth, that is intracranial neoplasm, unquestionably have their periods of latency. A brain tumor begins when the first cell divides abnormally. Psychological symptoms may appear months or years before diagnostic neurological symptoms of intracranial new growth. A fourteen year old boy who had always done well in school was observed by his teacher to suffer from distraction of attention. He went through the usual reprimands, punishments, and loss of privileges without apparent avail. He then became truant and engaged in other delinquencies ranging from petty to grand theft and finally burglary. He was committed to a state institution for juvenile delinquents where he remained for eighteen months. Later he was apprehended on another charge and committed to the state institution for older juvenile offenders. Shortly after his release from that institution he developed the symptom of a flash of light in the right visual field. This became more frequent and gradually larger until the flash of light developed into a large ball of fire which would whirl from the right into the center of the visual field. At the age of nineteen the boy had his first loss of consciousness and a convulsion typically epileptiform in nature. Neurological examination revealed localizing evidence of a tumor in the left occipital lobe involving the visual pathway. A neuro-surgeon removed the lesion. Had the aura which was truly the disorder of attention noted by the teacher five years previously, been followed up the boy's future might have been much different.

Mental deficiency will not be discussed here as eventually a psychometric test will be a part of standard equipment for every child in every school system. Psychosis developing on the basis of mental deficiency, that is psychosis with mental deficiency must be remembered. The period of latency here usually is from birth; borderline cases may be present and present problems in diagnosis.

Of other disorders of psychogenic origin we are interested primarily in dementia praecox. The teacher is frequently the first person to note the early symptoms of this disorder and it is important that she should be familiar with them. With the newer therapies in mental illness it is now recognized that it is extremely important to begin treatment early. A diagnosis of dementia praecox can be made by a layman or anyone other than a parent when the patient has "full-blown" delusions and hallucinations. At this point one is already dealing with a far advanced case and the hopefulness of treatment is considerably reduced.

Medicine has constantly stressed the importance of early recognition of somatic disease. This concept is now being applied to mental disease with marked change in probable prognosis. Like cancer, early dementia praecox and late dementia praecox are essentially two different diseases. I would stress for you the early cardinal symptoms of dementia praecox.[6] These are four: withdrawal, loss of capacity, emotional dulling and tendency to misinterpretation. A child past the age of eleven presenting any of these symptoms should be referred immediately to a psychiatrist. These symptoms are sufficiently important for elaboration. Withdrawal implies the withdrawal from reality. It is the pathological exaggeration of the psychological trait of introversion. In late dementia praecox it is seen as loss of contact with reality and the regression into a world peopled by images from phantasy.

Loss of capacity quickly comes to the attention of the teacher. Comparison with previous records shows that this child who always did well, was considered very intelligent, has rather rapidly begun to do poorly in his work. A marked change from the previous academic record of a student should be investigated promptly. If it is associated with any of the other cardinal symptoms mentioned referral of the case to a psychiatrist is warranted. Loss of capacity in its pronounced sense in advanced dementia praecox becomes disorder of association, indifference, marked interference with the mental processes of attention and concentration and finally stereotypy of thinking and behavior.

Emotional dulling is an easily recognizable symptom in a child. The normal nuances and flavorings of emotions that should sparkle and scintillate from the responsive mind of the child gradually lose their keenness. Situations calling for convivial harmony are met with progressive blunting which continues into loss of interest, and later indifference, with disharmony between mood and thought, the emotional disparity which essentially constitutes a general disintegration of the personality.

Tendency to misinterpretation may be less obvious. The child misinterprets because his thinking is dominated by his complexes. His associations with other students become strained. Frequently the first evidence of this is his rejection by the other members of his group.[7] Any child not accepted by his fellows is a candidate for further psychiatric study. The tendency to misinterpret progresses into the idea of reference, marked complex formation, and eventually becomes the basis for delusion formation. Other psychogenic mental disorders are not discussed here because of their extreme rarity in childhood.

In discussing the mind with already developed mental illness we do not

mean here the frank psychosis, either psychogenic or on organic basis. Rather is meant a group of cases the importance of which is just coming to be realized. We are speaking of those cases having organic brain lesions with resultant mental symptoms that are masked and frequently not detectable by ordinary methods but which interfere markedly with the learning process. It is through the science of clinical cerebral localization that knowledge of these factors has become possible; most of these enormous strides have been made during the last two decades. It is largely through the studies of Ingham and Nielsen in aphasia, agnosis, and apraxia that the recognition of these factors has become possible and our newer concepts have been made. For example Nielsen[8] discusses the psychological factors in reading and writing in relation to aphasia, alexia, and agraphia as altered by present methods of teaching. He states:

> "One learns first to read by reading aloud. As this is inconvenient, one learns by training to whisper if one is reading to oneself, then only to move the lips. The poorly educated never learn to read without this lip movement. In such cases a cerebral lesion placed so as to interfere with lip movement may cause alexia, even though the cerebral center for recognition of the words is not affected. In persons well educated this would be an impossibility.
>
> "Further, the method of teaching the art of reading has changed (in certain parts of the United States) in recent years. This change has brought new types of reading disability. Children formerly learned to read first letters, then syllables, then words. Now they learn words as a whole, with the result that they learn to read words which they do not know how to spell and without recognizing the individual letters. In other words it is the Gestalt idea applied to reading. Children by this method certainly learn to read more quickly but less accurately. When they develop aphasia they cannot be made to analyze the word into its elements; they guess at the entire word and attempt to determine what it is by the context which when asphasic they perhaps cannot read. In such cases 'asyllabia' does not develop."

In the skill of writing, psychological and organic factors may be confused as causes of difficulty. As an example of this Nielsen discusses his own case. A man who had always spelled well, he decided at middle age to learn the use of the typewriter. He found that he could not spell even simple words on the machine. His errors were recognized but he had to spell the words quietly to himself in a slow laborious way before writing them. The difficulty here was that the hand movements which he ordinarily associated with writing had been subtracted from his spelling mechanism and it was necessary for him to develop a new set of cheirokinetic movements and to form a new set of cerebral engrammes so that spelling could be done automatically on the machine without taking the circuitous route through the old laborious pathways connected with kinetic hand movement. Under certain circumstances, he continues, for example during an illness, if he were examined for his ability to write and furnished with blocks of letters to build words he would be unable to do so. As he himself states, "Is it not probable that one would assume a lesion of either the angular gyrus or the frontal lobe or both?" Hence psychological factors may be very difficult to determine and differentiate from organic factors.

Along the perilous pathway stretching from embryonic intra-uterine life to complete development of adult life lie many hazards and dangers to the integrity of the central nervous system. The manner and ways in which the brain may be damaged are almost innumerable. Some of these are: imperfect development of cerebral neurons, sclerosis or overgrowth of the neuroglia, gross developmental anomalies such as porencephaly, pseudo-porencephaly, hypoplasia of the cerebellum, hydrocephalus, internal hydrocephalus, old encephalitis, meningo encephalitis, Wilson's disease, meningeal hemorrhages, chronic meningitis, to mention but a few. Some pathologists believe that no brain comes through the birth canal without sustaining damage. If this is true some degree of birth injury is universal, with the exception of operative births not coming through the birth canal.

The injuries of infancy, in childhood the infections, particularly the unrecognized associated encephalitides accompanying the exanthemata of childhood, are most important. These considerations have led to the recent recognition that some type of brain damage is extremely common. Although it is another subject it sheds considerable light on the present problem. I would like to mention my recent studies of five hundred juvenile delinquents who were given careful and detailed neurological examinations. More than 60% of these cases had demonstrable signs of organic damage to the brain. In most of these it was possible to elicit a history of birth injury, postnatal trauma, encephalitis, or other process damaging the central nervous system. Both history and neurological signs of brain damage were much more frequent in this series of cases than is found in non-delinquent normal juveniles. Similar factors may pertain to learning for if brain damage is as frequent as we suspect, it is probable that many of the learning difficulties are based upon localized pathological processes in the brain which have resulted in specific defects making for learning difficulty. It is commonplace that we have individual difficulties with particular mental skills. One individual finds it extremely difficult to learn to calculate. Another has no recognition for tonal memory. Another has a marked impairment of his ability to achieve the sense of rhythm. Specific memory defects of almost any type may be found. It is true that within limits other parts of the brain may take over these cerebral functions impaired by specific damage; however this is not always the case and depends upon the stage of development of the individual at the time the lesion occurs. Some cerebral functions can be transferred to other parts of the brain only in very small degree and a few not at all. Such imperfect brains become problems for the educator for they present marked difficulties of a psychiatric nature standing in the way of learning.

One of my patients, a seventeen year old boy, developed a typical attack of acute encephalitis. After a period of somnolence lasting for several days he began to develop uncinate gyrus fits. He manifested other neurological signs that gave evidence of localization of the encephlitic process in Wernicke's area for sensory speech. There was also some involvement of Broca's area. Upon recovery from the acute phase of his illness several months later this patient had marked impairment of speech, was unable to say some words at all and had great difficulty in saying others. It was necessary to retrain his motor speech mechanism. I placed him under the care of Dr. Paul Pfaff of the San Diego State College who employs the method of the Hill-Young School. The fundamental principle involved is the placing of the muscles of speech passively into position for the making of each sound. This patient made a remarkable improvement of course utilizing and retraining his minor cerebral

hemisphere.

In conclusion it may be said that localization of function in the brain is being re-established on a sound basis as a result of clinical pathological studies. The frequency of brain injury gives adequate explanation of specific learning disability which can be taken over only incompletely by other parts of the brain. As Ingham[9] says, "The memory of experience, reasoning capacity and ingenuity and the intellectual capacity and motor skill acquired by training that are utilized in emotional behavior are all based upon 'engrams' developed in the cerebral cortex with connections extending to the diencephalon."

These complex connections are easily and frequently disturbed and give specific defects leading to disabilities in learning whether it be learning in the intellectual sphere or the learning associated with social moral concepts which distinguish the normal individual from the psychopathic personality.

The inescapable conclusion comes to us that every child who is having difficulty in some phase of the learning process which is so incongruous as compared to his other abilities that it is puzzling to the teacher should be referred for a neurological examination. Such an examination combined with a careful history may reveal a specific localized or diffuse brain damage. Once the diagnosis has been made special treatments may be instituted.

In passing it should be mentioned that such learning difficulties based upon impaired function of the brain due to cerebral lesion are frequently associated with psychopathic traits classifiable under the psychopathic personality. If psychiatric study of these individuals reveals a significant number of the cardinal symptoms of psychopathic personality, that is absence of sense of gratitude, deficiency in guilt feeling, impulsive behavior, complete justification of the means by the end attained, complete disregard for the consequences of action; sometimes any of the above factors combined with the ability to ingratiate, one has then a very special individual who may have to be institutionalized more or less permanently at some future date. Continuance of the educational process in the presence of such a personality in an attempt to overcome specific learning difficulties is a waste of the teachers' time and the taxpayers' money. Such individuals cannot be made to learn, neither can they be made to conform to socially acceptable standards. All too frequently nothing is done about such cases until they develop an accompanying psychosis, that is psychosis with psychopathic personality, which then dramatically brings the case to the attention of the authorities with resulting institutionalization. Even more frequently these individuals come into conflict with the law and then to the attention of the Juvenile Court where, if they are properly staffed psychiatrically, disposition is made which includes a therapy program utilizing measures other than punishment.

Summary:

1. Psychiatric factors affecting learning include all psychological . social influences which combine to form the complete psychiatric picture. Any concept which limits these factors to already existent mental disease is short sighted and inadequate.

2. Most facts of normal psychology have been learned through studies of the psychopathological processes of mental disease. The weight of psychiatric

evidence at present stands heavily in favor of the philosophical doctrine of determinism which is so important in the educational process.

3. Factors influencing learning from the mind theoretically normal psychologically are most important but not discussed here.

4. Abnormal factors from the theoretically normal mind involves the proper understanding of the term "nervousness" or nervous tension, the utilization of age-group concept as a point of classification in the avoidance of errors in diagnosis and the general concept that true psychoneuroses are practically non-existent in childhood.

5. Factors from the mind in the so-called latent or incipient mental illness stage are discussed and found to be much less frequent than is commonly believed. These are based frequently upon emotional disturbances which must be differentiated carefully from true psychoneuroses. These in general are the so-called "neurotic traits." Mental illnesses having periods of latency which are most common are psychosis with convulsive disorders, psychosis due to new growth or intracranial neoplasm, psychosis associated with mental deficiency, and dementia praecox.

6. In discussing the mind with already developed mental illness we are particularly interested in those cases having organic brain lesions which interfere with the learning process. Most strides in the understanding of these cases have been made through the advancement of the science of clinical cerebral localization. Studies of aphasia, agnosia and apraxia have been most valuable in developing our newer concepts of these cases.

7. A very high percentage of juvenile delinquents show demonstrable evidence of impairment of the central nervous system. It is believed that similar factors pertain to the learning process and that they are much more frequent than had been believed in the past. It is only within limits that other parts of the brain may take over cerebral functions impaired by specific damage. There is a frequent association of learning difficulties due to cerebral lesion with psychopathic personality. The etiology of the two conditions is probably very closely related. The cardinal symptoms of psychopathic personality based upon studies of 500 juvenile delinquents are outlined. Special measures must be instituted in such cases as the usual teaching techniques are frequently of little value. The complex connections associated with learning are rather easily and frequently disturbed. Their frequent association with psychopathic personality are cited as evidence of a common etiology.

Bibliography

1. Terman, Lewis M. and Almack, John Co. Hygiene of the School Child. Boston, Houghton Mifflin, 1929, p. 432.
2. Finney, Ross L. Sociological Philosophy of Education. N. Y., Macmillan, 1932, pp. 400-415.
3. Cunningham, G. Watts. Problems of Philosophy. N. Y., Holt, 1924.
4. Pearson, Gerald, M.C., DSc. Psychiatry of Childhood. (Oxford Medicine, Vol. 7) N. Y., Oxford Univ. Pr., 1936.
5. Bernard, Viola W. M.D. Detection and Management of Emotional Disorders in Children. Mental Hygiene 26: 368, July, 1942.
6. Thompson, George N. M.D. Case Report, Psychopathic Delinquent, Report of Conference, Delinquency and Criminality. California State Printing Office, 1942, p. 12.
7. Strauss, Alfred A. M.D., and Werner, Heinz, PhD. Mental Organization of the Brain-Injured Mentally Defective Child. American Journal of Psychiatry,

97: 1194, March, 1941.
8. Nielsen, J. M. M.D. Agnosia, Aphasia, Apraxia. Los Angeles Neurological Society, 1936.
9. Ingham, Samuel D. M.D. The Nature of Emotion. Bulletin of the Los Angeles Neurological Society, 49:7, June 1942.

UNITY IN HEARING CONSERVATION

Melverton E. Trainor,M.D., President, Auricular Foundation, Los Angeles

Medical men, and especially otolaryngologists, are becoming increasingly aware of the wide-spread problem of children with defective hearing. Much research has been undertaken to seek out causes and to find means whereby deafness among children may be helped. Individuals, clinics, hospitals, and research organizations have all joined in this great campaign.

In the past, those interested in therapeutics, gave but little attention or thought to another vitally important angle of the problem of defective hearing. This was the educational phase. Inasmuch as the first thought was medical it therefore remained solely medical in the minds of a few. These few believed that where there was a conservation of hearing program in the public schools, it must of necessity be a medical program.

Time has shown, however, that the educational problem is one of both the responsibility of the educator, and the responsibility of the doctor. Whatever the results of research might be toward help, or possible prevention of deafness in children, they must first of all be found by some means, whether by the careful observation of the teacher or by hearing tests.

Only then, and not until then, can medical science offer any help. And this task of locating the child with impaired hearing and bringing him to the attention of the medical director of the school system, or the family physician, brings up the question: Whose responsibility is it to find the child?

Naturally it is the duty of the doctor who has the ability to help such a child, to do so. But it is also his duty to recognize the peculiar and exceptional ability of specially trained people to seek out deafened children, even though they may not possess his ability to recognize pathological causes of the deafness.

These individuals, with certain qualifications for evaluating handicaps, are therefore indispensable to a well formulated hearing conservation program. For while they may have no ability to diagnose medically, they certainly can recognize the symptoms of otologic disfunction. They can then recommend that a medical man or otologist take over for further examination.

Such medical follow-up may or may not offer any help. The cause of the deafness may be of such a nature as to fail to respond to any type of treatment. If treatment does result in a complete cure, then there is no longer a problem. If, however, all medical attention fails at the desired result, the educational problem continues. The doctor goes on to the next medical problem and those trained in the special technics of education of the hard of hearing carry on.

There is a period wherein both the doctor and the educator work together. This condition is brought about during treatment. If the treatment is successful and the child is helped, all seems well. But if supplemental education has been postponed awaiting the outcome, the child will have lost the advantage of such extra educational assistance during the period, whether the treatment is a success or not.

The pioneer work in educational problems relating to children with impaired hearing which has been undertaken by Claremont Colleges, deserves the support of all groups and individuals interested in helping the handicapped child. It is a recognition of the responsibility of the teacher toward the handicapped child, and that it should not be entirely delegated to someone else. If she is to be reasonably sure that every child in her class has no physical impediment to learning, she should become familiar with methods for their detection.

There are other physical and mental elements closely related to a normal assimilation of class room work, but the functioning of the eye and ear are of paramount importance. Black-board writing must be of such size and clarity as to be visible to all, and any child with a vision defect which prevents his seeing from a distance must be identified and placed where he can see it. All oral instruction must be of such amplitude and articulation that all may hear clearly, and any child who cannot do so from the back of the room must be identified and placed where he can hear.

It is safe to say that many a class "dumb-bell," seated to the back of the room in the order of his grades--with the brightest children in front--was further handicapped by the move because a defect in sight or hearing was the basic cause of his difficulty. We are beginning to recognize the error of such procedure and are getting away from the policy of seating children according to size or by the alphabetical order of their names.

In the absence of any complete medical examination of the children, the correction of these errors is the teacher's responsibility. No medical program can do much more than seek to assist those who are identified as possessing possible defects. Under present conditions, when there is a shortage of physicians, the responsibility of the teacher is even greater. And in this work here at Claremont it is evident that the teacher is beginning to recognize that responsibility and is preparing herself to accept it.

I thinkI can safely say that 80% of the causes of hearing impairments in children may be found within an inch of the orifice of the eustachian tube namely:

1. Diseased tonsils.
2. Anatomical defects in the nose causing inflamation which extends to, and closes, the eustachian tube. This closure causes a rarefaction of the air in the upper end of the tube and within the cavity of the middle ear. There is, then, a denser pressure on the outer surface of the drum membrane which pushes it inward. This tends toward a poor conduction of sound vibrations to the inner ear.

The other 20% of the causes of deafness will be found largely due to these conditions:

1. Wax in external canal.
2. Injuries to hearing mechanism by foreign objects.
3. Diseases affecting central organ of hearing: syphilis, tuberculosis, tumors of the brain.
4. Drugs: quinine, salicilates, etc.
5. Allergy, Malnutrition.
6. Toxins.

We cannot be discouraged if startling results do not immediately follow removal of tonsils and adenoids, or clearing up the obstruction in the nose. Where the condition has been of long standing, tissue takes time to right itself.

There is a possibility that the operation might be poorly done. It is very easy to leave a piece of tonsil or some adenoid tissue or a contact in the posterior part of the nose. These would keep up enough inflamation to keep the eustachian tube closed.

Every school has a percentage of children whose parents, because of religious belief or other reason, will not permit medical examinations. For such children the doctor can do nothing. It is the sole responsibility of the teacher to do whatever can be done to off-set the handicap of physical defects among these children.

Thus a unity of purpose in which the doctor and the teacher work together with a sympathetic understanding of each other can accomplish much which neither one can do alone.

THE INFLUENCE OF THE DUCTLESS GLANDS ON EDUCATION OF CHILDREN

Clifford A. Wright, M.D., Los Angeles Orthopedic Hospital

It is my purpose to discuss particularly the influence of fundamental factors on the educability of the child. For many years scholastic attainment was considered in terms of volume of intelligence or mental calibre as revealed by intelligence quotient tests. Psychological and environmental influences received major attention.

Physiological and biological factors as well as developmental irregularities are extremely important and it has been my opinion that until recently this phase of the educational management of children has been somewhat neglected. These symposiums have been outstanding for several years, and this group is to be complimented on its broad approach to the subject to include all contributing factors. Certainly this activity can be preventive and should accomplish results comparable to the remarkable achievements of preventive medicine.

The study of abnormal children is equally important, if not more important than that of the normal, for the latter type will follow an educational program quite satisfactorily. Consideration of the physical and physiological factors indicate study of the child as an individual as distinguished from sociological or group study. Consideration of groups has not produced very satisfactory results in regard to abnormal children. The Crime Committee of New York State, in 1930, definitely compared the consideration of individuals and of groups. They greatly favored individual study and made the interesting statement that with behavior groups in New York State they had tried everything from soup kitchens to ceramics, without much success. The ability of the individual child to profit by instruction, his behavior and his conduct, are extremely important regarding his future and ultimately that of society as well.

Fortunate indeed is a person who attains normal physical, mental, and personality development, for this is of prime importance and is a prerequisite of normal scholastic attainment.

As just indicated, development may be divided into three main spheres: physical, mental, and social and moral or personality spheres. In the normal individual, development in these three spheres occurs in unison; but unfortunately this is not always the case, and we may see stigmata of faulty development in any of the three phases. Stigmata of faulty physical development may be associated with superior mental ability, or a child may present a high intelligence quotient combined with a low personality or P.Q. rating. The latter is an unfortunate combination, for these highly intelligent persons may show little regard for the rights or property of others. They are not concerned with discipline and many will be problem cases. Conduct or behavior is an individual's reaction to his or her environment and developmental factors are important in this regard.

Many things influence development. The two main factors concerned are environment and heredity. Environmental influences are important but in my

opinion hereditary influences are more so. Environmental factors include climate, nutrition, school, church, home, recreational facilities, infectious diseases, syphilis, and alcoholism, whereas hereditary characteristics are influenced by race, family, biological and physiological factors, and these include the ductless glands.

The influence of the ductless glands is best demonstrated in relation to development, and is particularly active from birth throughout adolescence. They have a marked effect on development in all three spheres, physical, mental, and personality. The emotions are of importance. Normal emotional reactions are necessary to normal conduct and education. The ductless glands have a definite influence on emotions and they in turn have marked influence on the ductless glands. Ductless gland disorders may be inherited. The late William Engelbach found that in 2,098 endocrine patients, 1,910 had a history of heredity, while 21 per cent showed direct inheritance from parent to child. Hereditary influences in this respect are not necessarily direct from mother to child, but may occur along mendelian lines.

The important glands in this discussion are the thyroid, pituitary, sex glands, and adrenals, and we may see individuals who are tall, short, obese, or thin, smooth-faced young men and hairy girls, frequently showing emotional or psychological imbalance, all due to glandular disease.

Deficiency of the thyroid gland is an excellent example of the influence of ductless gland activity on children's mental and social reactions. Because of abnormal reactions to environment, children with hypothyroidism are frequently misfits. They are nonconformists in kindergarten and school, have but little respect for the rights and property of others, and demonstrate a marked interference with personality development; unless treated they may become more serious offenders later in life.

They resent discipline and react badly to it. A syndrome including a triad of symptoms due to thyroid deficiency, in a paper by Dr. Louis A. Lurie in the Journal of the American Medical Association,[1] includes hyperactivity, destructiveness and speech irregularities. It is interesting how often such a triad of symptoms is found in children who do not do well in school, and how often a careful study of such a child will demonstrate very definite physiological and laboratory findings of thyroid deficiency. This condition may begin early in life when the mental development is so rapid and important, and when if treatment is delayed invaluable time may be lost, resulting in irreparable damage to the individual. Two or three examples may be of interest. Several years ago a boy of eight was brought to my attention. He was alert, had an intelligence quotient of 114 per cent, but had social and moral or personality reactions of a child of four and preferred to play with children half his age. This combination produced a real problem.

A boy of twelve years was attending a private school in this vicinity. Because of his resentment at what would be considered justifiable discipline

1. Lurie. "Endocrinology and the understanding and treatment of the exceptional child." J.A.M.A. 110:1531, 1938.

he walked home a distance of approximately twenty-five miles, and in doing so wore off the soles of his shoes and stockings, and reached home barefooted with most of the skin gone from the soles of his feet. It was necessary for him to use a wheel chair for several days while getting well. Another older boy, reacting to boarding-school discipline, showed his resentment by turning on the water in the bath tub until it ran over and destroyed much of the plastering. All these individuals were of fairly normal intelligence and physical development. They all had thyroid deficiency.

The thyroid is a gland of development and growth and owes its activity to the iodine it contains; thyroid preparations are designated by the percentage of iodine content. This gland is active in every body cell and has marked influence on physical, mental, and personality development. While the thyroid is essential to normal mental ability, some children with moderate deficiency of this gland may show fairly normal intelligence tests but do poorly in school due to lack of concentration and interest in their work. Many such patients are brought in for treatment. Just recently two patients were non-readers, though I do not propose thyroid deficiency as the etiology of this interesting condition. They are chronically tired and must continuously drive themselves to accomplish any work, and there may be marked interference with the special senses. Individuals with hypothyroidism have low metabolism and chemical exchange. I have likened this condition to a smouldering and smoking stove with a closed damper. Thyroid extract is specific in most cases and acts like opening the damper of a stove.

Hypothyroid mothers may give birth to hypothyroid children. It has been said the time to begin treatment is with the grandmother. I should not leave this subject without mentioning a tragic condition known as cretinism, which is characterized by an extreme congenital under-activity of the thyroid, sometimes amounting to entire aplasia or absence of the gland. Only if this condition is diagnosed early in infancy can results from treatment be obtained. When treatment is started early enough some have reached school and have done fairly acceptable work.

Hyperthyroidism or over-activity of the thyroid, seen in Graves' disease or exophthalmic goiter, is occasionally found in children of school age. This condition is an excellent example of the influence of the ductless glands on the emotions, and of the emotions on the ductless glands. Many cases of exophthalmic goiter may develop soon after an emotional shock. One patient, a school girl, developed this condition shortly after the unexpected death of a favorite teacher. It was necessary for this patient to be treated surgically. These persons are restless, nervous, irritable, apprehensive, and show marked emotional imbalance. They may even develop psychoses. They require treatment, which necessitates their absence from school. Different types of goiter are seen in childhood as well as adolescence and not the least important of their influences is the cosmetic effect seen in many school girls.

The pituitary gland, located in the base of the brain, and weighing less than ten grains in the human, is of great importance in relation to development and to the present discussion and, because of its very close physiological inter-relationship with other glands, particularly the sex glands, thyroid and adrenals, it has been spoken of as the master gland.

Fortunately many ductless gland symptoms are apparent in a clinical inspection of the patient, and this is particularly true of the pituitary body or hypophysis. It has marked influence on growth, body proportions, weight, sexual development, body markings, and some types of hairiness.

The most apparent effects of pituitary physiology are those on growth and sexual development. Other things being the same, the individual's growth is a direct indication of the production of growth hormones by the pituitary gland. Shortness, tallness, thinness, and obesity may have direct relationship to its activity and these somatic irregularities per se may cause marked influence on emotional and psychological reactions of the child. In fact these reactions have been classified as psychosomatic and are quite important.

Boys do not mind being tall, but girls may be quite embarrassed by excessive height. Equally embarrassing may be shortness or dwarfism. I well remember a young man of twenty-four who had specialized in public speaking at a university in Utah. He came to Los Angeles to complete his education, thinking he would be able to have treatment in my office, only to find that at twenty-four years of age it was too late. In his chosen specialty, shortness was to his mind a great handicap.

While many of the pituitary types have normal mentality, some are definitely juvenile in their reactions, mentally and socially. These groups include the fat, so-called lazy child who does not react normally to environment. Those with social maladjustment fail to make friends or keep them easily. Many are unreliable and untruthful. The late Allan Winter Rowe estimated that 25 to 35 per cent of certain pituitary types are problem cases.

They may be guilty of offenses such as taking food, or money to buy food, usually sweets. Some may commit minor thefts, while others may be guilty of more serious crimes, as forging checks and embezzlement. They are never guilty of crimes of violence or sex crimes because of lack of genital development.

Both boys and girls, particularly in certain pituitary types, show failure of normal genital development. Many times I am asked to write excuses from gymnasium work for the Froehlichs type of boy who cannot be prevailed upon to take part in activities which require undressing or showering in front of his friends. Girls have menstrual irregularities which may be responsible for considerable loss of school time.

Obesity is a common symptom in pituitary types. In my practice obesity is recognized as a symptom of certain glandular disturbances and when it exists and a relationship can be demonstrated with faulty gland activity treatment is given with considerable success. These peculiarities of body build, indifference to physical activity, and lack of sexual development are important regarding the emotional background of the individual. In recent times, as these young boys approach the military age it is recognized by mothers and fathers, and should be by physicians that they are not physically adequate to engage in the strenuous activity of military service.

There are several types of pituitary disorders, each with characteristic findings, and with definite relationship to development and conduct and educability in the individual. Certainly many of these patients may be benefitted by endocrine therapy.

Perhaps the most closely associated physiological relationship in the ductless gland system is that which exists between the pituitary through its anterior lobe and the sex glands in either sex. There would be no development or function of the sex glands without the so-called gonadotropic influence of the pituitary and any marked interference with this automatic pituitary gonad balance is accompanied by symptoms. Menstrual irregularities in this type are common in adolescent girls and may interfere with school work. This is apparent in the large number of girls constantly found occupying school rest rooms. A normal girl should have no difficulty at her menstrual time, and should be able to proceed with her school work and physical activity within reason.

Where sex gland deficiency occurs early, marked changes in body build follow. The enuuchoid individual is tall, long-legged, and slender, with long hands and feet. This type is not aggressive and frequently not successful. The circulation is likely to be poor. Emotional instability is common and timidity may frequently interfere with recitations. These and lack of energy may prevent good school work. Adolescence, initiated by puberty and characterized by rapid growth and development, may be a trying time in the life of either a boy or a girl. It is a period of rapid change and is accompanied by recognition of the influence of the sex hormones. This is a time when many ductless gland disorders have their beginning. Emotional and psychological instability amounting to changes in personality are common, and even the more serious mental disorders, classified as psychoses, may have their origin at this time. It is difficult under such conditions to do acceptable school work. Truly a boy, and more particularly a girl at this time of life is deserving of special consideration, and when there is any abnormality a careful individual study and treatment should be forthcoming.

There are two adrenal glands, one on either side just above the kidney. The adrenal is a compound gland, consisting of two glandular elements, the medullary or inner part which produces adrenalin, and the cortex or outside part which may be likened to a think peeling of a tangerine, and which is essential to life. This cortical part gives off one or more masculinizing hormones, classified under the general term, "Seventeen ketosteroids." When in the girl there is an excess of these masculinizing hormones there may be a marked change in the body hair, with heterosexual hair distribution. The menstrual function is definitely interfered with, and may be absent, and the patient may show exaggerated masculine characteristics physically and socially. I have seen patients who needed to shave several times a week. This condition is extremely embarrassing to girls and young women, and many of them will not engage in normal social activities. A similar condition may be caused by certain tumors of the ovaries.

There is nothing haphazard in normal physiology. The percentage of sugar, salt, calcium, potassium, and other chemicals found in the blood is very definite. The same is true of the production of the sex hormones. We are not able successfully to estimate the actual amount of different

hormones produced by the different glands, but we are able to measure the output as elimination products in the urine and thereby obtain an excellent estimate of the patient's hormone production. We may test the urine for the sex hormones, particularly the male, female, and gonadotropic or pituitary factors; it is significant that a change, or lack of normal balance of these hormones may be associated with definite changes in the mental and social attitude, and frequently in the physical make-up of the individual. Lack of balance is frequently the cause of sex irregularities.

Though less important than those already mentioned the thymus and parathyroid glands must not be overlooked in this discussion. The parathyroids have a marked influence on bone metabolism. Diseases of the parathyroids may cause bone changes of considerable importance even in adolescents.

Less is known regarding the physiology of the thymus gland and no definite internal secretion has been identified. However it is a gland of childhood and atrophies at about the time of puberty. Recent research work indicates a definite influence on development, particularly skeletal development.

In reply to the frequent question how the lay person, for example the teacher, may identify children who are abnormal from a glandular standpoint, may I say that identification of abnormality in growth, size, weight, conduct, behavior, and ability to work and accomplish and to adjust socially should not be difficult, and when recognized these children are deserving of attention and treatment. The treatment to be given must depend on which gland or glands are involved, and a diagnosis is imperative. Glandular products are used as substitutive treatment and to antagonize the activity of other glands. X-ray treatments to glands and surgical removal of tumors are less frequently necessary though they are important when indicated. In selected cases, where endocrine therapy is properly directed and consistently given, good results may be expected.

CLAREMONT COLLEGES READING CONFERENCES

Papers. First annual conference, 1936. 226 pages, mimeographed 8½ X 11, heavy paper covers, cloth back. Net, postpaid out of print

Papers. Second annual conference, 1937. 127 pages, mimeographed 8½ X 11, heavy paper covers, cloth back. Net, postpaid out of print

Papers. Third annual conference, 1938. 57 pages, mimeographed 8½ X 11, heavy paper covers, cloth back. Net, postpaid $1.25

Papers. Fourth annual conference, 1939. 120 pages, mimeographed 8½ X 11, heavy paper covers, cloth back. Net, postpaid out of print

Papers. Fifth annual conference, 1940. 229 pages, mimeographed 8½ X 11, heavy paper covers, cloth back. Net, postpaid $2.00

Papers. Sixth annual conference, 1941. 181 pages, mimeographed 8½ X 11, heavy paper covers, cloth back. Net, postpaid $2.00

Papers. Seventh annual conference, 1942. 355 pages, mimeographed 8½ X 11, heavy paper covers, cloth back. Net, postpaid $2.50

All prices above subject to 2½% State Sales Tax for California orders.
Orders should be addressed to Claremont Colleges Library, Harper Hall, Claremont California.

Contents: 1936 Reading Conference

Anderson, Forrest N. Psychiatric aspects of behavior.
Balmer, Louise C. The reading process as a whole.
Bartlett, Ruth. Problems with teaching lip-reading.
Blend, Frances. The blind child and his reading.
Clark, W. Brant. Eyesight and vision aspects of reading instruction.
Conner, Jay D. Developing supplementary materials for the social sciences.
Dart, Carroll. Perceptual problems with reading.
Dupuy, Grace. The primary program.
Evans, Vivian. Reading in the primary grades.
Eyre, Mary B. Emotions and reading.
Fenton, Norman. Reading and child guidance.
Fuog, H. L. Developing eyes for better reading.
Garrison, Blanche L. Developmental and remedial reading for high school pupils.
Hawk, Sarah Stinchfield. Speech problems and reading.
Hill, Mrs. George. Value of visual education in the classroom.
Houloose, James. Reading and the school health program.
Ingham, Samuel D. Reading and functional sense reception.
Israel, Marion L. Supplementary materials for reading.
Kerr, Clare. A program of developmental and remedial work with reading in the elementary school.
Lamson, Robert W. Allergies and human behavior.
Lembke, Glenn L. Evaluation of textbooks and other instructional material.
Lewerenz, Alfred S. Method and procedures of evaluating instructional materials for reading.
Lordan, John P. The visual ability of children as a factor in modern education.
Macomber, F. G. A developmental program for reading.
Mills, Lloyd. The art of seeing.
Paul, Beulah. A functional reading program for the elementary school.
Perkins, F. Theodore. The psychology of the reading process.
Pickett, Lulu Leigh. Organizing community resources.
Roos, Alfred. Allergy and school achievement.

Scott, Benjamin D. Speech and school achievement.
Trillingham, C. C. Reading problems in the secondary schools.
Viverka, Madilene. Problems of readiness for book reading.
Warburton, T. Stanley. The organization and administration of a program for reading instruction in the secondary schools.

Contents: 1937 Reading Conference

Benjamin, Harold. The reading interests of young adults in a Minnesota community.
Cutsworth, Thomas D. Problems in the interdependence of the senses.
Douglass, Harl R. Teaching reading in the high school.
Dunn, Maud Wilson. A program for diagnosis and reading development.
Elliot, Essie L. The role of nutrition.
Farris, Lucien P. Visual defects as factors influencing achievement in reading.
Field, Harold M. Economy and carry-over in the teaching of reading.
Goodsell, Joy G. The eyes in the act of reading.
Hansen, Frank A. Illumination and efficient reading.
Hovious, Carol. Pleasure-reading books for slow-learning groups at the junior and senior high school level.
Jaques, Louis. Eyesight and learning.
Lowman, Charles LeRoy. Physical factors influencing education.
Monroe, Marion. The administration of remedial reading in the public schools.
Orth, Fred W. Visual aids in the progressive reading program.
Shelton, E. Kost. The endocrine glands as related to mental and physical development.
Weida, Ehtelyn Yount. Reading program of the Compton Union Junior High School.
Wilson, Clinton A. The visual apparatus and school work.

Contents: 1938 Reading Conference

Benning, Beth H. Developmental features of a reading readiness program.
Fuog, H. L. Visual adaptations made by students to avoid reading difficulty: their relation to teaching.
Kerr, Clare. Long-term planning in the development of a reading program for the prevention of reading disability.
Perkins, F. Theodore. Some aspects of perception.
Sandiford, Peter. Transfer of training (abridged account).
Spencer, Peter L. Broadening the basis for reading instruction.
Story, Russell M. A philosophy of education.
Washburne, John N. The relation between insight, problem-solving, and skill (summary of main points).
Research studies in reading at Claremont Colleges, 1938.
Harris, Margaret N. A study of discriminations pertaining to beginning reading.
Miller, Grace Gray. A technique for the improvement of reading ability in the senior high school.
Critchfield, Ruth. A study of pneumographic recordings of respiratory movements during overt reading and a correlation of the results with an objective reading scale.
Kerr, Clare. An analysis of reading disability.

Contents: 1939 Reading Conference

Britton, Jasmine. Plant to prosper.
Brombach, T. A. The psychological blindspots in reading problems.
Cage, Mrs. Mabel Vinson. Practical classroom procedures in secondary reading.
Campbell, Douglass Gordon. Neuro-psychiatric principles in education, counseling, and therapy.
Cavanaugh, Lyman A. Causative factors in developmental defects in children.
Danielson, Cora Lee. Remedial reading procedures in Los Angeles.
Hargrave, Willard B. Hearing as a factor in behavior.
Hedges, Mrs. Leo B. The motion picture in community and school life.
Manzelmeyer, Mrs. Lute. Some basic principles of teaching reading.
Kelly, B. W. Training pupils to see.
Koon, Cline M. Discrimination in the use of radio and motion pictures in education.
Pottenger, F. M. Jr. Allergy and its relationship to education.
Reed, Mrs. Ruth. Implementing the curriculum with audio-visual aids.
Warburton, T. Stanley. Administrative problems with remedial reading.
Wilcox, Mrs. J. C. A community reading clinic program.
Wirt, S. E. Techniques and materials for reading instruction.
Research studies in reading at Claremont Colleges, 1939.
A multi-sensory approach to the teaching of primary reading. Agnes Newcomer. Master's thesis, Claremont Colleges, March, 1939.

Contents: 1940 Reading Conference

Addison, Mrs. Gertrude. Reading as a language art.
Ahrens, Maurice. Reading science materials.
Campbell, Douglass Gordon. General semantics and behavior.
Caster, J. Edward. Semantic aspects of the reading process.
Dalton, M. M. and Stokesbary, M. R. A survey of visual conditions in a California school system.
Harris, Louise. Reading to children.
Keuneman, Huberteen. Remedial work with reading.
Mirick, Gordon. Reading mathematics materials.
Mitchell, James. Reading motion pictures.
Montgomery, Mrs. Norman. Practical problems in writing for reading.
Park, Gordon. Classroom approach to reading difficulties.
Peters, Henry B. Visual efficiency in relation to reading ability.
Robbins, Alfred R. Visual problem in educating.
Scarbrough, H. E. General semantics and reading.
Sheets, Millard. Reading the art language.
Spencer, Peter L. Gettsville becomes reading conscious: a dramatic panel.
Story, Russell M. Reading propoganda.
Tager, B. N. Personality changes in endocrine disturbances.
Walker, Harold B. Administrative aspects of reading problems.
Walsh, Michael. Nutritional aspects of the reading process.
Wilcox, John C. Physiological impediments to learning.
Wilder, Mrs. Frances F. Semantic aspects of vocational adjustment.

Contents: 1941 Reading Conference

Ames, Mrs. Jean Goodwin. Reading art.
Bulliet, C. J. On reading the language of art.
Clark, A. Burton. Developing visual ability for proficiency with reading.
Davis, Mrs. Irene Poole. Speech in the educational program today.
Dresser, Jay D. Visual aids in the classroom.
Fox, Guy. Some observations on the reading problem.
Gardner, Willis Morton. Vision in relation to education.
Gibson, Charles D. Illumination as a factor in reading the printed word symbol.
McLean, Donald. Outline of the evolution of communication.
Nohavec, Hazel B., The functioning of fundamental reading concepts in music education.
Pattison, Lee. The fundamentals of interpretation.
Perkins, F. Theodore. Reading and the psychology of learning.
Pierce, Zelma W. A develcpmental program of reading: elementary and secondary.
Pitcher, Alice C. The flashmeter as an aid to reading.
Reddick, Harry E. The application of reading techniques to soil conservation.
Rice, Mabel. The sophisticates and children's books.
Rogers, Helen Jewett. Problems, procedures, and materials in the reading program of Los Angeles secondary schools.
Shrodes, Caroline. Reading to extend experience.
Sullivan, Elizabeth T. Some aspects of the reading problem.
A teacher learns about reading.

Contents: 1942 Reading Conference

Angell, Joseph W. Literature and Semantics.
Bellemin, George. Reading the Rocks.
Bellemin, George. Stories in Stones
Christensen, Leonard M. Types of Reading Situations in the Upper Grades
Cooper, Charles W. Through the Hat and over the Head, a Talk on Basic English.
Curtis, Louis W. Music of Latin America.
Danielson, Cora Lee. Teaching of Reading to Gifted Children
DeLong, Edward. Relationship between Instructional, Physical and Physiological Factors in the Maintenance of a Well-Balanced Equilibrium.
Forsberg, Roberta. How to Make Use of Basic English in the Classroom.
Genung, Harriett. Techniques for Motivation in the Classroom.
Goudy, Mrs. Elizabeth. Radio in Education in Time of Crisis.
Hargrave, Willard B. Hearing and Reading
Hockett, John. Materials and Methods since the New England Primer.
Kennedy, Catherine. Inability or Disability as Associated with the Reading Problem
Lesser, Julian. Serving a City in Wartime.
Lowers, Virginia Belle. How I Teach Reading.
McCutchan, Robert G. Development of Music Notation.
McCutchan, Robert G. Music, A Form of Reading.
Madden, Richard. The Effect of the Degree of Hearing upon Reading.
Madden, Richard. Materials for Developmental Reading.
Morrison, Donald. Aniseikonia, a Factor in Reading Programs.

Newby, Ruth. Reading Readiness at the Kindergarten and Early First Grade Level.

Nordahl, Marguerite. Procedures for Developing Comprehension in Reading.

Perkins, F. Theodore. Physical Growth Factors.

Perrelet, Lois. Reading Activities in the Elementary Grades.

Pfister, Elta S. Techniques for Social Adjustment involving Reading Ability.

Purviance, Edward. Some Aspects of Seeing, Perception and Visual Re-Education.

Reddick, Harry. Reading the Soil Text in the Book of the Land.

Robinson, Charles J. Obstacles in the Way of Better Nutrition.

Serrurier, Mrs. Zenna. How I Teach Reading.

Shrodes, Caroline. Exploration of the Self Through Reading.

Shuck, Lenel. Applying the Democratic Method to the Selection of Music Materials.

Sicher, Lydia. How to Read Human Minds.

Smith, Nila B. Reading in the Activity Program.

Spencer, Peter L. Reading, the Educative Process.

Stringfield, Lamar. Orchestral Techniques for Schools.

Van Gundy, Justine. Exploration of the Social World through Reading.

Warburton, Stanley. Evaluating the Tests of Reading Development.

Warren, Curtis. Effects of Physical Deficiency upon Educability.

Weida, Mrs. Ethelyn Yount. Report of Experiment to be Submitted to Southern Section of State Curriculum Committee on Developmental Reading.